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WESTERN Farm Life

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DENVER, COLORADO, JANUARY 1, 1917

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Feed Straw With Silage

Kansas sold 1,345,900 pounds of butter to New Mexico, Wyoming, Utah, Montana, Texas, Oklahoma and Old Mexico in the year ending June 30, 1916, according to figures quoted from the annual address of Prof. W. M. Jardine, president of the International Dry Farming Congress. It was further declared that every one of these sections is just as well adapted to dairying as is Kansas and that each of the states should be exporters rather than importers of butter. "They should be selling butter and not so much wheat," was the way Professor Jardine put it.

Kansas has an ample market for dairy products eastward, and the mountain states certainly should be producing at least their own requirements, if not a surplus. The dry land farms of the plains and mountain valleys must be developed as the source of dairy products thru utilization of cheap feeds, produced on low-priced land. On this point Prof. Jardine had the following to say: "Since the advent of the silo it has been shown by a number of experiment stations and leading farmers that by-products such as fodder of corn and sorghum crops, may be converted into ensilage and thus made to produce palatable, succulent feed in combination with which animals will also consume anywhere from ten to twenty pounds of straw daily, and a ration composed of these feeds, together with a little alfalfa, or some other nitrogenous food, will maintain an animal in good condition at a minimum expense. When livestock is not maintained, millions of tons of straw—perfectly good feed when fed in conjunction with ensilage—is burned every year, or otherwise wasted. The item of straw alone, if utilized as feed for animals, would produce a handsome return for the dry land farmer. Such a utilization can only be made thru the feeding of livestock."

In the dry farming districts of Colorado and New Mexico the vines of the pinto bean, when fed with silage, make a first-class dairy ration. Bean straw has almost as much feeding value as alfalfa hay.

Herbert Quick Coming

At the time of going to press Director of Extension H. T. French of Colorado Agricultural college received a wire from Washington stating that Herbert Quick, member of the Federal Farm Loan board and a noted author of agricultural books, would attend the Colorado Farmers' congress and make an address on the farm loan law. He will speak at Fort Collins January 17th.

Other speakers of national reputation booked for addresses include: Dr. George M. Potter of the dairy division, U. S. Department of Agriculture, who will talk on Contagious Abortion; Prof. W. M. Jardine, director Kansas State Experiment station; Prof. J. G. Milward of the University of Wisconsin, who will talk on potato diseases; Lou D. Sweet of Denver, president of the National Potato Growers' association; Dr. H. D. McMillan of the U. S. potato experiment station, Greeley, and Geo. E. Farrell, assistant national leaders of boys' and girls' clubs.

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Case Announces A New Sized Tractor

Case now presents to the agricultural world a fifth farm tractor—conservatively rated as nine horsepower at the drawbar and eighteen horsepower at the pulley.

This 9–18 is especially designed for smaller farms. Its performance is remarkable. At all of the tractor demonstrations held recently this Case 9–18 proved a sensation. It was welcomed by men who wanted a smaller sized tractor backed by a big and long established company. Previously our own 10–20 was looked upon as the smallest standardized tractor on the market in the quality class.

This new final-type Case Tractor is the outcome of several years of field and laboratory experiments, based on 26 years' experience in the gas engine world. And back of that are 75 years of experience in manufacturing farm machinery. Case never lets the farmer do the experimenting. That rule means money to you, and protection.

In this smaller sized tractor are combined the merits of all tractors now on the market, together with Case principles of construction and Case national service. This makes a combination that is not to be found elsewhere.

Case now manufactures five types of tractors—rated as follows: 9–18, 10–20, 12–25, 20–40 and 30–60—in addition to the regular line of Case farm machinery.

Before buying a tractor, know the Case line. Better be safe than sorry.

In commemoration of our twenty-fifth anniversary we have just published an unusually beautiful catalog in colors, which is now ready for distribution. This costs us 20 cents to produce. Yet we send you a copy free. Write today.

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Case 9-18

160 ACRE FARMS IN WESTERN CANADA FREE

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The war's devastation of European crops has caused an unusual demand for grain from the American continent. The people of the world must be fed and wheat near $2 a bushel offers great profits to the farmer. Canada's situation is therefore especially attractive. She wants settlers to make money and happy, prosperous homes for themselves by helping her raise immense wheat crops.

You can get a Homestead of 160 acres free and other lands at remarkably low prices. During years Canadian wheat fields have averaged 20 bushels to the acre—many yields as high as 45 bushels to the acre. Wonderful crops also of Oats, Barley and Mixed farming as profitable an industry as grain growing. The excellent grasses full of nutrition are the food required for beef or dairy purposes. Good schools, churches, markets convenient, climate excellent.

Military service is not compulsory in Canada, but there is an extra demand for farm labor to replace the many young men who have volunteered for the war. The Government is urging farmers to put extra acreage into grain. Write for literature and particulars as to reduced railway rates to Supt. of Immigration, Ottawa, Canada, or

J. L. PORTE
Dunn Block, Great Falls, Mont. Canadian Gov't Agt.

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A Western Magazine for Western Farmers and Stockmen

Comprising Ranch and Range, Farmers Life and Fruit Journal, Trans-Mo. Farmer and Ranchman

Largest Circulation of Any Farm Magazine in the West

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The West's Million-Dollar Live Stock Exposition

FORECAST OF THE NATIONAL WESTERN IN DENVER, JANUARY 20-27

A Painter Herd Bull

THE West's Million Dollar Stock Show opens January 20 in Denver and continues to the 27th, both dates inclusive. Exhibits of beef and dairy cattle, horses, mules, hogs and sheep to be shown in the breeding and fat classes at the National Western this year will eclipse a million dollars in value. And the show will be a reflection of the present condition of the livestock industry. At the International last month in Chicago prosperity was the keynote and it will be more pronounced at the Denver show, for agricultural prosperity has come to the West in greater measure than to any other section of the country.

Never in the history of the livestock industry of the world have such prices been paid for fat stock and breeding animals as were paid in Chicago in December, and the high figures are an index of the condition in which the industry finds itself. The money is there and it brings money. For the farmer—and in the Rocky Mountain region the farmer and stock raiser are one and the same—the show will have added educational value. There will be more and better animals to see. The herds that showed in past years will be there again so that improvement may be noted. In the popular Hereford breed all the big western herds will be on hand and several of the noted ones from the east. Col. E. H. Taylor is coming with his fine Kentucky herd. It was one of Col. Taylor's bulls that fixed the altitude record at the International, bringing $15,100. This bull is still in the herd and he will be brought to the National Western so that the farmers of this section can see what a $15,000 bull looks like.

Great Shorthorn Show

There will also be a great Shorthorn show. Carpenter & Ross, the Ohio breeders, will bring their entire herd, including the champion bull sold for $6,600 at the International, to be delivered here to the Colorado purchasers, the Maxwell-Miller Cattle company of Steamboat Springs.

A new feature for the Herefords will be a futurity contest, put on by the Western Hereford Breeder's association, which is expected to bring out some wonderful young stuff.

The National Western is the only show that offers a carlot class for purebred bulls. Over 2,000 bulls were sold during the 1916 show, and it is expected that the number will be exceeded this year. This feature is one of the strongest indications of healthy growth of the stock industry in the Rocky Mountain states.

Cumberland's Type, the Denver Champion Shorthorn Bull in 1916

The advancement of the industry is aptly set forth in a poster which is shown on the billboards and in windows in all western states just now. "Yesterday" and "Today" are shown in graphic form, the illustrations bringing out what the stock industry was before the show was organized and what it is today, with its purebred animals, due in large measure to the stock show, which has always emphasized educational features and kept before the farmers the fact that the exhibition was the medium for grading up their herds. The farmers have taken advantage of the opportunity and they will be present in larger numbers than ever as spectators and buyers; to learn and to act on their judgment after looking over the exhibits.

The Four Dairy Breeds

What is true of the beef breeds applies equally to the dairy cattle, horses, and to swine and sheep. The dairy division will be exceptionally strong this year, with the four breeds in western favor well represented. These are the Holstein, Jersey, Guernsey and Milking Shorthorn. The dairy show will occupy new quarters, well arranged for the convenience of the herds and the public. There will be milking contests and other interesting events. All the milk taken from the cows on exhibition will be dispensed free to the public—a feature that ought to be very popular now that Colorado is dry.

Sheep Grazing on National Forest

The National Western is noted for its feeder cattle exhibition, a feature that is stronger here than at any other show. Buyers will be on hand in unusual numbers, and, judging from what took place at the International, exhibitors will be well paid for bringing in their stuff.

With prices ruling higher than ever it was a noteworthy fact at Chicago that the animals bringing top in the fat classes were bought at Denver a year ago. The big cornbelt feeders were at the International and the lesson was not lost on them. They will be here looking for similar good stuff, and willing to pay for it.

Horses in Big Demand

Unusual interest attaches to the exhibition of horses and mules, which is always a big part of the National Western. This year the war's influence will make itself felt in the horse division, because of the big demand that exists and the fact that the country is being combed for suitable animals of all classes. This was apparent at the International last month, when American breedors had the show to themselves, with the four great draft horse breeds, exhibiting individuals in every class and age that measured up to perfection. Now that tho American horso breeder has been forcibly cut loose from reliance upon Europe, the industry is on a new basis and western breeders will be keen to show what they are doing to meet the new conditions.

Saturday, January 20th, which is opening day, will witness the Intercollegiate Students' Judging Contest, to be participated in by stock-judging teams of students from the Agricultural colleges of Utah, Wyoming, Kansas, Idaho, Nebraska, Oklahoma, Iowa and Colorado. The contest will take place in the arena and will last all day.

Fine Horse Show Program

There will be a Horse show to eclipse all former efforts. This is the place where the stock farmer and his family will meet city society on equal terms. The horse show is a leveler of social distinctions. Everybody admires the horse, and he will be there in all his glory. Swift and Company showed a new team of sixes at the International, and they will have them at Denver for exhibition every evening. This team is conceded to be the handsomest ever put under a six hitch.

Miss Loula Long, the famous horsewoman from Kansas City, who has always been a favorite here as well as at the International, will be in Denver again with her stable, as will O. J. Mooers of Columbia, Mo. Tom Bass with his high school horses will be there. And these favorites of other years will find in the competition many less known but aspiring contestants who will make the night programs brilliant and interesting.

On the closing night of the show there will be a mixed program of horse show and athletic events, chief among which will be a contest for the national championship in the tug-of-war between teams from the Omaha and Denver police departments. The high schools of Denver will furnish teams and individuals for other athletic contests to provide excitement for the horse show crowds.

Stock Show History

The National Western Stock Show was born in 1899. That year Denver was the convention city for the National Livestock Association, the sessions of which were held in the Tabor Opera House. In order to give the convention the proper atmosphere, some of the Denver stockmen and dealers decided, some weeks before the convention, to arrange for a stock show at the Denver yards, which were insignificant in size as compared with the yards of today. This event was advertised as tho National Exhibition of Range Cattle and was held January 24 to 27, 1899. The show consisted entirely of feeder cattle in carlots, about thirty-five loads being exhibitod. The premiums were contributed by Denver merchants and others, and for its period the show was a success.

No further exhibition was attempted until Ex-Governor E. M. Ammons became president of the Colorado Cattle Grower's association in 1905. Due to his efforts the first Denver Fat Stock and Feeder Show was put on in January, 1906, and this was the real beginning of the National Western, now one of the world's greatest livestock exhibitions and ranking ahead of even the International in some features.

The 1906 show led to the incorporation of the Western Stock Show association, the charter members of which were E. M. Ammons, F. W. Boot, Clyde B. Stevens, W. L. Carlyle, Jose P. Adams, Fred P. Johnson, William M. Springer, Harry Petrie, L. F. Twitchell, A. J. Campion, John H. Fesler, C. E. Stubbs, J. F. Vallery, E. Bosserman, Gordon Jones, John Grattan and I. N. Moberly.

For the second year Col. William E. Skinner, who had been general manager of the International and is today general manager of the National Dairy Show, came to Denver and took charge. Under his influence the second show far exceeded the first in size and interest, and from that time on there has been constant progress. Today the buildings that house the exhibition represent an investment by the livestock interests of something like $300,000, and while there is no direct financial return on this, the industry in the Rocky Mountain states owes its advancement largely to the educative influence of the National Western Stock Show.

The Farmers' Congress

The week preceding the stock show, the Colorado Farmers' Congress will meet at Fort Collins. The dates are January 15 to 20. In 1916 the congress numbered 280 visitors. From all indications the attendance will be far greater this year. At the last session an amendment to the constitution was adopted, providing for a representation of two delegates from all livestock, horticultural and agricultural organizations instead of one, and also two delegates from each country women's organization. The women are thus admitted on the same basis with men and it is expected that the women's section will, therefore, have far greater attendance and interest than ever before.

The program, which was covered in detail in our last issue, will touch every part of farm life. Sectional meetings will be held by several of the loading agricultural organizations of the state, which at this time will hold their annual sessions in connection with the congress.

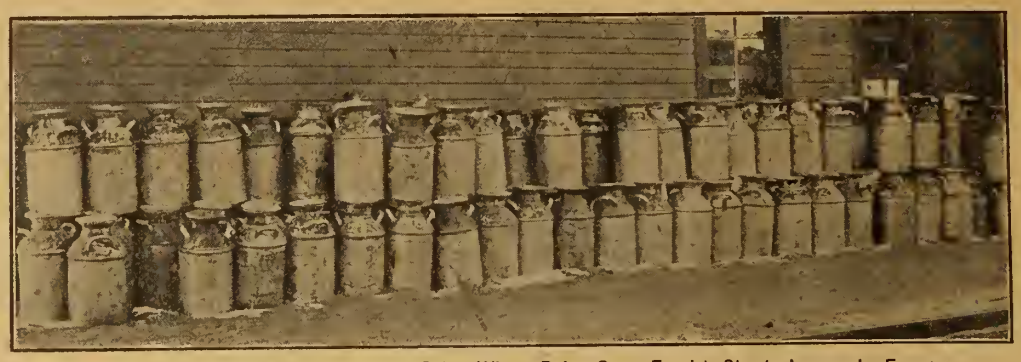
Special rates are announced by all railroads to cover both the Congress and the Stock Show. The two weeks will be the annual educational holiday for the farmers of the Rocky mountain region, and both occasions will merit the patronage of farmers and their families.

Prize-Winning Berkshires at Panama Pacific Exposition

427009

More Livestock and Dairy Products Are Needed

SECRETARY HOUSTON ON MEAT AND MILK OPPORTUNITIES



Cream Awaiting Shipment at Stratton, Colo., Where Dairy Cows Furnish Steady Inoome to Farmers

No branch of farming will stand expansion more readily and profitably than livestock production. And no section has a better opportunity for sharing in this expansion with its attendant returns than the Rocky Mountain region. Nowhere else on the North American continent do forage production on cultivated lands and free grazing, or regulated range at nominal cost, meet under such favorable climatic conditions. We have a natural forage crop and pasture country. It is here that livestock production in all its branches—breeding of beef cattle, dairy cattle, sheep and hogs, and their fattening, milking or finishing for market—should flourish as nowhere else. For this reason every farmer is vitally interested in the educational features of the National Western Stock Show, to be held in Denver January 20 to 27.

Increased production of meat and dairy products is occupying the attention of economists. The world must be fed and each little corner has its particular duty, its peculiar product to provide. Ours is meat and milk and we have the favorable circumstance of a broadening demand and a declining supply to deal with.

Per capita production of meats in the United States decreased over 34 per cent in the ten years following 1899. While there was an increase at the end of the next decade of 5.7 per cent, production was still 28 per cent less, on a per capita basis, than in 1899.

In dairy products the decline in per capita production of milk from 1899 to 1909 was 14.6 per cent and from 1909 to 1915, 5.5 per cent. Butter and cheese show a per capita decline of 2.5 per cent from 1899 to 1909, with no complete data available for the later decade.

Detailed Figures Given.

Detailed figures were made public by Secretary of Agriculture Houston in his annual report for 1916, as follows:

Meats, (beef, veal, mutton, pork)—Production 1899, 18,865,000,000 pounds. Per capita, 248.2 pounds. Production 1909, 19,712,000,000 pounds; per capita, 213.9 pounds. Production 1915, 22,378,000,000 pounds; per capita, 219.6 pounds.

Dairy Products—Milk, 1899, 7,265,804,304 gallons, per capita, 95.6 gallons; 1909, 7,466,406,384 gallons, per capita 81.0 gallons; 1915, 7,696,844,000 gallons, per capita 75.5 gallons.

Butter and Cheese—1899, 1,790,097,244 pounds, per capita 23.6 pounds; 1909, 1,942,378,069 pounds, per capita 21.1 pounds. No complete data available for 1915.

In the same period the population increases are thus shown: June 1, 1900, 75,994,575; June 1, 1910, 92,174,515; June 1, 1916, 101,882,479.

Meat and dairy products constitute 37 per cent of the average diet. It is pointed out by the secretary that meat production reached its lowest point in 1913 and that there has been an increase since then of rather marked proportions, especially in number of swine, but that sheep have continued to decline. The increase in cattle and hogs has been maintained in spite of heavier slaughter. The efforts of the department to increase the supply has been turned in the direction of combatting stock diseases as well as thru improved methods of production by better breeding and feeding.

National Forest Grazing.

It is stated by the Secretary that National Forest ranges are now supporting 1,750,000 cattle and 7,850,000 sheep, these figures being exclusive of calves and lambs. The carrying capacity of these ranges has been increased from 15 to 30 per cent by systematic regulation and improved methods of handling stock. An additional increase of 15 per cent is promised in the next ten years, so that, eventually, these ranges will support 2,000,000 cattle and 9,000,000 sheep. The secretary recommends a system of control on public lands outside the national forests. The area thus available and now grazed in haphazard and wasteful fashion, is 250,000,000 acres, all within the western mountain states.

Regarding the sheep industry it is pointed out that the United States imports from two-fifths to more than one-half the wool required for domestic consumption, the average importations during the last three years being over 300,000,000 pounds. There has been an increase in the consumption of lamb and mutton, and the average number slaughtered at inspected plants now numbers about 13,000,000 head per annum.

There has been a steady decline in sheep production in this country as in all other settled countries except Great Britain, because sheep have been produced primarily for their wool and wool production is not profitable on high priced lands. In Great Britain meat is the chief product and wool the by-product, with the result that the sheep industry has flourished. The secretary recommends study of British methods.

Possibilities in Dairying.

The dairy industry shows equal possibilities of expansion in the Rocky Mountain states with meat production. Dairy farming is increasing in all sections of the country, for two reasons: recognition of the value of fertilizers and demand for milk products in the country's food supply.

The report does not touch the point, but it is pertinent here to call attention to a situation in the central states that must be relieved by larger production in the Rocky mountain districts. The industrial centers are rapidly increasing the circle from which they draw whole milk for domestic consumption, thus driving the dairy farmers out of the butter and cheese business. The mountain states are being drawn on more heavily each year for cream to make butter, and the cheese industry is languishing, because America has got into the habit of buying cheese abroad. Our cheese exports, says the secretary, amounted to 57,000,000 pounds in 1870, increased until 1881 when the total was 184,000,000 pounds and since that time have steadily declined until the present time, when the exports are almost negligible. On the other hand our cheese imports have been steadily increasing, being 64,000,000 pounds in 1914.

The war has helped the producer of American cheese by forcing prices on imported to prohibitive figures. If proper advantage is taken of this fact the industry can be expanded, so that we will at least supply our home demand. The districts where such expansion should come are mentioned by the secretary as follows:

"All the valleys in the Rocky mountain section and a large area on the Pacific coast offer splendid conditions for cheese production."

We have it on the highest agricultural authority that conditions are favorable for expansion of meat and milk production. The same authority refers specifically to the territory in which Western Farm Life circulates as being the region in which such expansion is possible and where it can be made profitable. The National Western Stock Show is the medium thru which the farmer comes in touch with the breeder. Here he can make his choice of pure-bred cattle, hogs or sheep that will enable him to increase his revenue from stock farming, enhance the fertility of his farm and get a share of money that must come to the producer from the consuming centers of the world.

Production of Food Crops

"The production of food crops adequate to meet the consuming needs of the country and the export demand is a matter of large importance to the American people," says Secretary Houston. "Our potential agricultural resources in this respect are so varied and ample that there can be no doubt of the ability abundantly to supply our domestic wants, when climatic conditions are normal and foreign demand is not excessive. One of the greatest agricultural needs, therefore, is the stabilizing of production.

Sharp fluctuation of yield and price from season to season tends to stimulate speculative and superficial farming and to discourage the systematic crop rotation and thoro cultural practice which are essential to an enduring and economically sound agriculture. It is obvious that, in large measure, stabilization of production must be brought about thru the use of better adapted or improved crop varieties, more systematic and rational crop rotations, and improved agricultural practice generally, including, in many sections, larger attention to livestock production."

Further discussing the extension of areas of production the secretary says:

"While progress in this direction is necessarily slow, it is gratifying to note that in recent years the production of corn in the southern states has increased greatly. At the same time the frontier of commercial corn production has advanced steadily northward in the upper Mississippi valley and plains states.

The Grain Sorghums

"Farther south and west, especially in western Kansas, Oklahoma and the Panhandle of Texas, corn is being displaced to a considerable extent by the grain sorghums because they more regularly produce profitable crops. Approximately four million acres now are devoted to these crops. One of these sorghums has been changed by systematic breeding into a standard variety which produces a much larger yield of grain. Dwarf milo, a recent result of systematic breeding for low stature, has a higher grain-yielding power under adverse conditions than the tall variety. During the past four years it has become the leading variety grown in Oklahoma, Texas and New Mexico. As the sorghum grains, in large measure, serve the same purpose as corn, the economic soundness to the nation of their enlarged production is apparent.

"'The area devoted to durum wheat has strikingly increased. This crop now is well established in western North Dakota, South Dakota, eastern Montana and Wyoming, and northeastern Colorado. As the durum varieties are more resistant to rust than other types and require less rainfall, their introduction by the department has proved to be of very great importance to the country. The durum production already has attained a magnitude of 40 million bushels in a single year."

Sugar Beet Industry

The sugar beet industry is another western subject touched in the secretary's report. He calls attention to the increase during the past four years from less than 700,000 tons to approximately 900,000 tons and states that during the past year seven new localities for sugar beet production have been developed. He mentions also that the Department has made provision for co-operation with the industry in solving the more technical problems of sugar beet seed production.

On the subject of the National Forests the secretary states that the use made of them is increasing steadily. Their returns to the treasury last year exceeded $2,800,000.

Pork From Western Hogs Ready for the Curing Department in the Packing House

Car of Dean Rurals to Start Potato Seed Farm

COLORADO GROWER TELLS OF TOUR OF EASTERN DISTRICTS

W. R. McCLELLAN

The following is the first of a series of articles written for Western Farm Life by W. R. McClellan, a potato grower from the Greeley district, who has just completed an investigation of the industry in New York, Maine and Wisconsin and will produce certified seed beginning with the season of 1917.

WE MADE our first stop at The New York Central Railroad Experimental Farm at West Bergen, N. Y. They are experimenting there on grass and grain as a side issue. The main object is to raise pure-blooded Holstein bulls which they furnish free to communities in order to stimulate better stock, more butter and cream and better farming. They have some 50 or 60 very high grade Holsteins which they milk and separate the cream. They have an arrangement with two very large fancy dairies who use only pedigreed stock, who raise the heifers but ship the bull calves, and they raise them on the skim milk and calf feeds. Had 14 of the finest calves I ever saw.

We looked over the farm and discussed methods with Mr. Manning, who was formerly the manager of their potato farm which they sold three years ago. They showed us 20 acres seeded to one-third alfalfa, one-third clover and one-third timothy three years ago. This piece cut this year 3½ tons to acre the first cutting and one ton each at second and third cutting, or 5½ tons per acre in all.

They say the alfalfa furnishes to the soil the nitrogen needed, so timothy grows 8 inches higher than before, and then the alfalfa grows that much higher to get the light. Then we went to the barn and saw the three cuttings and the different lengths of the hay. This is the college idea and is being worked all over the state with like results.

Then we went to Ithaca to Cornell University, where the Agricultural College is. We spent two days there. One-half day I spent at the county agents' convention, two of whom I had been corresponding with. Thirty-seven counties out of the 63 in the state now have county agents. All the potato-growing counties have agents, and I never saw 37 more earnest workers than these men, and quite a number had their wives with them and they were all taking notes on important points.

First we went to Prof. E. G. Montgomery, who is the head of the potato department, and has a very able assistant in Prof. E. V. Hordonberg. I told him I was starting a pure seed farm in Greeley and wanted some of the purest rural seed potatoes in the state, such as we used to get 25 years ago. They have in New York a very strong potato growers' association and at the head of each potato growing county is the county agent. The result is they had last year over a hundred prominent farmers growing pure seed under the college direction who make five visits each season. First on application to join the pure seed growers they investigate the seed, and it must be free from disease and pure in type, and look over the ground it is to be grown on. Then during the summer to see if any disease, or if sprayed properly, and they must be sprayed at least twice, or if any disease as much as five times. Then when dug or during digging, to see if they are all right. Then, having passed all this, they give a certificate that it is pure.

Sent Him to Dean

Prof. Montgomery said: "You are rather late, as the state has been combed pretty well, especially on rurals at from 3c to 3½c per pound," and he turned to his book and read off 100 bushels here and 200 there left, and only two men had a carload of rurals. But he said, "The place for you to go is down to Nichols on the Susquehanna river. It is much better for you than up north, as they have hot sun down there, the same as you have in Colorado. I was raised in Nebraska and graduated from Nebraska University and know your conditions. The change will not be so great. This man Dean was a graduate twelve years ago in the farmers' class and went into potato growing for New York city fancy trade, and has got some rurals that cannot be duplicated in the state nor United States. You better go down there and see him. My advice is to buy there and while you may have to pay more, you will not regret it."

So I paid $1,650 for 40,000 pounds of Dean Baking Rurals, to be shipped March 15, 1917. The particulars I will explain later at Farmers' Institute. Mr. Dean has selected each fall for his seed plot the next year 50 to 75 bushels that conform to his ideal of what they should be, both in type of potato and also as they grow in the hill, and the result is they grow around a circle not over 14 inches in diameter from 8 to 14 in a hill, with scarcely any over one pound and very few less than 2 ounces and 80 per cent run from 4 to 10 ounces. And he gets 25 cents per bushel more than any other grower for fancy hotel and restaurant trade.

Look Smooth as Apples

One man has sold his crop for the 12 years. He raises from 12 to 15 acres a year and has from 4,000 to 6,000 bushels and has not had a sorter on his farm in seven years. As he shovels them up he throws out anything under a 2-ounce and sells to his neighbors for seed at a big price. Has never sold over 65 bushels and usually runs 40 to 50 bushels of seed or about 1 per cent. They look in the field as smooth as apples in a barrel.

At the college they have for five years been keeping a record of the best growers in every county, to show in Institute work what a good, up-to-date potato grower could raise, and Dean has them all beaten, 50 bushels over any other such grower and 100 bushels over any rural grower.

Green Mountains are the heaviest producers there. Dean has averaged in the five years about 400 bushels per acre, while New York state averages under 125 bushels. He uses 1,600 pounds fertilizer to acre, sprays five times, dips his seed in corrosive sublimate and has not had a diseased hill on his farm in three years. His present crop came from two hills eight years ago, when he kept two hills that fitted his standard completely. One had 12 perfect potatoes, the other 14, and he kept them separate and from them got his present crop. He is called the most expert grower in the United States and the only man, so far as the college people know, who has followed such hill selection for such a length of time. His neighbors say from this small seed they grow 50 bushels more per acre than any other they can get. We did not find anywhere in that field a missing hill nor a weak hill. He goes over his field every season but very rarely finds a weak hill, but if he does, out it goes.

Finest He Ever Saw

I have been growing and selling potatoes for 35 years and certainly never saw such a field in all that time. It shows what can be done when such men grow our seed and our farmers plant such seed instead of taking their culls as they now do. In Europe such men as Dean grow all the seed used and very few growers grow their own seed, and New York believes it is also coming here and are urging some expert grower or growers in every locality to engage in this special kind of work. Wisconsin is also doing the same thing and had last year 80 farmers growing certified seed, and at the Eau Claire convention the college urged the county agents to endeavor to get some expert grower to go into pure seed work in their county.

I also had two nice visits with F. S. Welsh, Agriculturist for the New York Central railroad. He said that this wave for pure seed was going to cover the whole United States in a very few years and wonderfully increase the yield of potatoes and also the quality and so induce more consumption, and his road was doing everything they could to further the work. He bought 200 bushels for the West Bergen farm and would buy some of Dean to try. This, after I told him of my buy and he said he was going out to see him soon.

Later will tell of our visit at Houlton, Maine, with the king seed potato grower of the United States, E. S. Cleveland, who grows 3,000 acres for seed, and our visit in the markets of Boston, New York and Washington, to see what the buyers and sellers want. Also our three days in Washington at the National Potato convention and four days at the Wisconsin Association meeting and conditions as I saw and believe in for the future.

Cheap Pork on Field Pea Pastures in Wyoming

HIGH ALTITUDE CROP THAT CUTS DOWN GRAIN REQUIREMENTS

T. S. PARSONS

THE eastern farmer coming into Wyoming asks at once, "What can I grow in place of corn for fattening hogs?" The experienced farmer of the state answers "barley and peas," with emphasis on the peas. The San Luis Valley of Southern Colorado has long been noted for its pea-fed hogs, and the Wyoming station has proved by experiment that barley meal is equal to corn meal in fattening pigs.

The average altitude of the farming land in Wyoming is about 6,000 feet above sea level. Corn cannot be grown successfully at altitudes above 5,000 feet. Therefore, this crop can be grown over only limited areas, and in many parts of the state those crops which are adapted to high altitude conditions must be raised to take the place of corn in the feeding rations. Barley has long been grown and its value as a stock feed amply demonstrated.

Field peas are a comparatively new crop in the state, but wherever tried they have shown themselves well adapted to high altitude conditions, especially under irrigation. There is no crop that lends itself more readily to "hogging off," and as a pasture crop for pigs it is unsurpassed. Peas are cool climate plants and being legumes are excellent muscle builders and the grain contains much fat. When used for fattening the peas should be well matured before the hogs are turned in, and the hogs should not have the run of the whole field at one time, as many peas and vines will be wasted by tramping. Hurdles or temporary fences should be used so that the hogs will have access to only part of the field at a time. A large saving is made by this method of pasturing.

Author of the Article and Seven-Foot Field Peas

Peas and Oats for Hay

On the Eden Valley project in Sweetwater county, Wyoming, large areas of peas and oats are sown and cut for hay. Here the oats and peas are allowed to mature before cutting. The hay is then used for feeding and fattening sheep and hogs. The hogs are allowed to run on the stubble after the grain is cut, picking up the peas and oats that have shattered out. This is all the feed they get until fattening time, and no thriftier pigs can be found anywhere. About three or four weeks before desiring to ship, the hogs are penned up and fed on ground or soaked peas and oats. The hogs are in healthy condition from running on the cut-over pea and oat ground and take on flesh rapidly.

This section is about fifty miles from the railroad, so the hogs are butchered at home and hauled to market, where they are sold as dressed pork. The flesh of hogs fed on peas is firm and sweet and is preferred by many to corn-fed pork.

Experiments carried on by the Animal Husbandry department of the Wyoming Experiment Station show good results from peas in fattening rations. The experiments also showed that pigs that had previously been on pasture made better gains where put on dry feed than did pigs that had had no pasture. Good returns were made from pea pasture in every case.

In the experiments twenty-one pigs were divided into three lots. Two lots were put in pea pasture and one lot in pen. In the case of the pastured pigs one lot was allowed the run of the entire field and hurdles were used for the other lot, so that they had fresh vines from time to time. Each pasture lot contained 1.47 acres and furnished grazing for seven pigs for 112 days, the pigs being on one-half grain ration. The pigs in the dry lot received a full grain ration.

Hurdles Prove Beneficial

To determine the residual effects of the pasture the pigs were taken from the peas at the end of the 112 days and placed on a full grain ration. Those on the hurdled peas gained on an average 109 pounds. Those on the unhurdled peas gained 90 pounds, and those not pastured gained only 88.5 pounds. It was found that hurdling the peas gave considerably the best results. The pigs in the hurdled field required 250 pounds of ground feed to make 100 pounds gain;

Continued on Page 11

Steer Fattening on the Dry Farm

PRACTICAL HINTS BY A PLAINS FARMER

F. A. VEVERKA

(These practical suggestions on steer feeding on the dry land farm come from a practical farmer located at Willard, Colo.—Editor.)

THE fattening of steers for market is a proposition which but a very few of the dry land farmers have looked into. It seems to be a popular idea that steer feeding is something which belongs to the corn belt or to the sugar beet regions of the country. Perhaps the reason for this is that but very little steer feeding has ever been tried and as a consequence it is something we know very little about.

We raise yearling and two-year-old steers, selling them locally for 5½ and 6 cents per pound, but we have not as yet gotten into the practice of keeping these steers, feeding them out, and selling for 8 or 9 cents per pound. Dry land farming in this part of the country is still very young. The proposition has been and still is, to a certain extent, one of making a living and building a home rather than dealing in something which requires a little capital and involves a certain amount of risk.

Steers can be fattened on the dry lands and a handsome profit realized, for we have the steers and the feed which will put the growth and fat upon them. We grow a great deal of grain and forage which we had much better market on hoof than haul to market.

To feed steers at a reasonable profit, one should either grow the steers or the feed. It is perhaps best to grow the feed and then buy the steers. In this way you can regulate your feed by the previous season's crop. It is not advisable to handle less than a carload, as it would hardly pay for the trouble, and it would be somewhat of a handicap to market a few head, as local butchers do not handle good fat cattle.

In this day of scientific farming one hears a great deal about the balanced ration and about proteid and carbohydrate feeds. It has been proven that a certain combination of feeds will produce beef cheaper than others, but steers will fatten very well on a ration of corn, corn silage, sugar cane, wild hay or other hay with some oil cake added to the grain.

Either yearling or two-year-old steers are all right. The older steers fatten and are finished a little sooner, but the yearlings will put on a greater gain for the feed used, so it is immaterial which kind one uses. The prices and the supply on hand would govern this matter. It would hardly do to fatten a mixed bunch, as the older steers would be ready for market some time before the younger ones, and they would not be of uniform size. It is a popular idea, but one not altogether right, that it does not pay to fatten steers unless they are of A No. 1 feeder type. The fact is that the most money seems to be made feeding the more common kind of cattle, because these can be bought much cheaper and when finished sell within perhaps 50 cents per 100 pounds of the tops. Steers showing dairy blood are not desirable, as they will not finish well and always look rough, which will spoil the looks and sale of a bunch of good cattle. It is best to put the steers into the feed lots when the fall pasture begins to get short, but while the cattle are still doing well. It is a mistake to let the stock run out in the fields till they get poor and rough, as it takes a long time and a great deal of feed to get them started right. With plenty of roughage and silage 1,000 bushels of corn will fatten a carload of steers very well. In fact, if the steers are small and in good shape at the start they can be put into shape with but a little over one-half this amount of corn.

It is quite safe to start the cattle out on 10 pounds of corn silage and 4 pounds of grain per head, with all the roughage they will use, increasing so as to have the stock on full feed in about twenty days. A two-year-old steer on full feed will handle about 15 pounds of corn and about 30 pounds of corn silage daily with about 5 pounds of roughage. With oil cake worth about 2 cents per pound and often far to haul it seems to be an expensive feed, but one-half to 1 pound daily per steer seems quite indispensable, as it sharpens the appetite and gives the animals a bloom and finish which the buyers want. Various roughages may be used, wild hay, cane hay, alfalfa, Sudan grass or even good corn fodder. Various grains will give the desired results. However, one thing seems to be indispensable—that is corn silage. This is not only a good feed in itself, but it creates an appetite for the grain and roughage without which the steers will not make satisfactory gains. With good care and handling the cattle should be ready for market in 100 to 120 days. As this really is a winter's job for the farmer he should plan to be through when the spring work begins.

On the average farm there is an open period from the end of harvest till the spring work opens up. There is nothing which fits into that season so well as the feeding of a bunch of stock. This will really make the farm produce two crops annually instead of one. Where hired help is considered it gives employment to men who would otherwise be dismissed; and the money a farmer realizes from his crops would be working for him thru the winter.

Wife—You've been drinking again. Your breath smells like hops.

Hubby—No, you're mistaken, wife. I had frog legs for supper, and it's their hops you smell.

Cultivate a cheerful smile if you would live long and happy.

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Our Great Annual Winter Sale of
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Women Build Community Hall

TOWN PROVIDES PLACE FOR FARMER MEETINGS

WHEN the women get busy on community improvement things are accomplished. Here is a picture of what the Women's Booster Club of Haswell, Colo., has done in the way of building a community hall. This is a cement block building with an interior finished for lecture hall and theater, a basement used for kitchen and public dining room, a rest room for ladies on the first floor and a room reserved for public library. The cost

Community Hall at Haswell

of the building was $2,500. The enterprise was financed thru a building and loan association and entertainments and lectures, given thru the winter months, are counted on to pay off the installments still due. Over $400 was raised on the opening night. Mrs. Minnie Davenport, wife of a Haswell business man, is president of the Women's Booster Club, which is composed of town and country women. The building provides a suitable gathering place for the farmers as well as for town meetings.

The people at Haswell are interested in a creamery proposition that was put up to them by a Chicago man who owns land in the district. The promoter wants 80 acres of land as a creamery site and the guarantee of the cream from 1,600 cows before investing his money. The plan is to use Ford trucks for picking up the cream thruout the surrounding country and to use the eighty acres at the plant for a high-class dairy farm, on which purebred cows are to be kept.

There was also on foot at the time of the writer's visit a plan to establish a motor mail route to cover the country south and west of Haswell. Farmers' telephone lines have been established in three neighborhoods and those will soon be connected up with the Bell long distance system.

A tractor had just pulled into town drawing seven loads. Six of the wagons were loaded with Turkey Red wheat and the seventh with empty oil barrels. The six loads of wheat were scooped into a car that stood waiting on the sidetrack. This wheat was grown 20 miles north of Haswell by F. J. Anderson on sod and it averaged 10 bushels per acre, which is a fair yield considering the season. Mr. Anderson has 160 acres in wheat this winter and he is hoping for better returns. The level plains roads make tractor hauling an easy proposition for farmers living at a distance from the railroad.

The last report of the assessor of Kiowa county shows fifty silos in the county, most of them of the pit type. Cream shipments are increasing every year. In 1914 kafir was marketed by the carlot from Haswell, but comparatively little was produced in 1916, as the crop got a poor start and did not mature. Feterita did better than kafir last season.

Kiowa county took second premium at the state fair for county exhibits against strong competition from the irrigated sections. No distinction is made between irrigated and non-irrigated products in competition for the sweepstakes. Some of the dry land counties call this unjust discrimination, but other counties are willing to take their chances against the irrigated sections, feeling that they do not suffer by comparison.

Garden on Stored Moisture

F. W. Haupert of Bennett calls himself a "Parsonite" when it comes to deep plowing. He has a garden that is a sort of a soil demonstration plot for all the farmers in the neighborhood. It is plowed 18 inches deep and thirty-six loads of manure have been put on the ground in five years. The manure was disked in. Every vestige of it has been absorbed in the soil and no manure particles can be found in a close examination. The soil seems to be so hungry for humus that it literally eats it up. The moisture in that garden has penetrated to a depth of five feet. Radishes have been dug out of it twenty-two inches long. The summer of 1916 was "dry as a bone," but Haupert's garden looked like an irrigated plot. The plants thrived on stored moisture and a humus-fed soil.

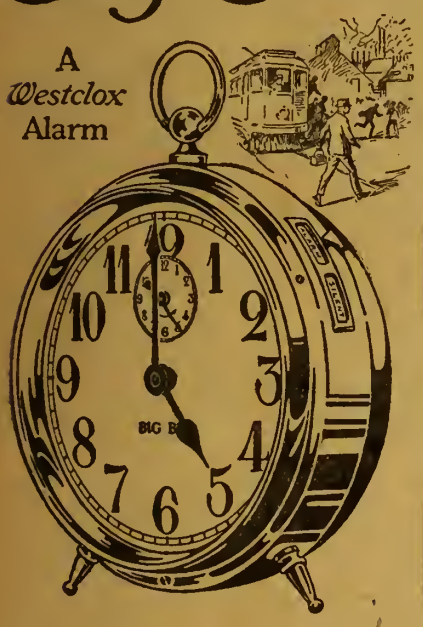
Idaho Farmers to Meet

The fourth Annual Farmers' and Housekeepers' Week of the University of Idaho will be held at Moscow, January 22 to 27, 1917. The week's program will be of interest to stockmen, dairymen, creamerymen, grain growers, poultrymen, fruit and vegetable growers, teachers and housekeepers. One entire day will be given over to a discussion of the following: Growing and marketing of beef cattle, sheep and other livestock. Management of soils and the growing and marketing of farm crops. Dairy cattle, the production, manufacture and sale of dairy products. Growing and marketing of potatoes, other vegetables and fruits. Poultry raising and the sale of fowls and eggs. Meat cutting and meat curing demonstration.

Strong speakers have been invited to make the Housekeepers' program, which will run thruout the week, exceedingly interesting.

Big Ben

A Westclox Alarm



FIVE A. M. for factory men who beat the time clock at the works.

Big Ben gives 'em their breakfast call long before the whistle toots. They used to pound the pillow right up to the last dot—until they learned a better way—as the paymaster soon found out.

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An IDEAL Boiler and AMERICAN Radiators can be put in your building just as quickly and easily in January as in August. The AMERICAN Radiators come all assembled for placing in the rooms; the IDEAL Boiler sections are easily carried in and made up into a complete boiler in basement or sideroom. The piping connecting the IDEAL Boiler with AMERICAN Radiators is readily run up through corners of the rooms, closets or out-of-the-way places, and the outfit may be completed in a few days to your utmost satisfaction. You will then notice the striking contrast between the chills and cold of old, wasteful methods, and the sure, economical heat a-plenty from the IDEAL-AMERICAN outfit, making you glow all over with satisfaction.

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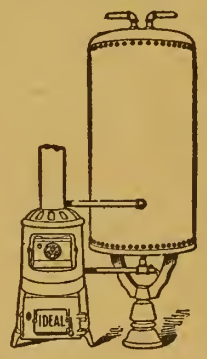
A No. 4-19-W IDEAL Boiler and 270 ft. of 38-in. AMERICAN Radiators, costing the owner $200, were used to heat this farm house. At this price the goods can be bought of any reputable, competent Fitter. This did not include cost of labor, pipe, valves, freight, etc., which vary according to climatic and other conditions.



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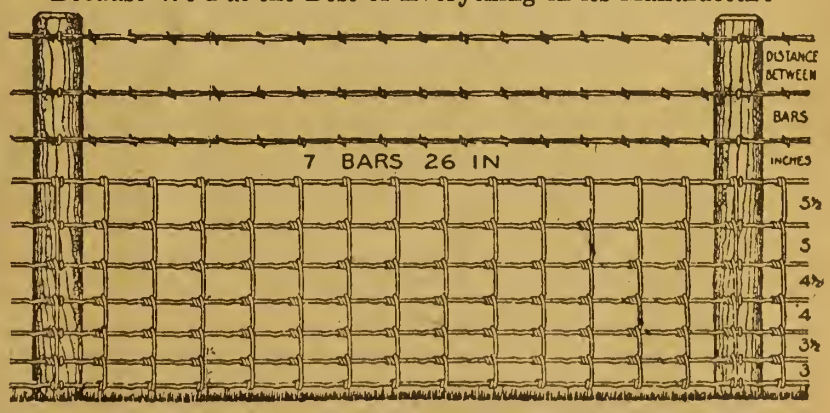

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Pure Seed Law

There will be introduced at the session of the Colorado state legislature, which opens January 2nd, a bill providing for seed inspection. Every farmer is interested in this measure. It provides for the inspection and proper branding of all seeds; for a statement on packages or other containers, of the germinating power, the purity and freedom from noxious weed seeds and the year grown, as well as the region, country or state where grown. It is a measure intended to stop misrepresentation and fraud of a kind that has cost the farmers of the United States millions of dollars in the past. Now that many states have such a law those that have not yet enacted proper legislation are made the dumping ground for impure and dead seeds. The spread of weed pests and plant diseases is due in great measure to this unscrupulous practice. No honest dealer in seeds will object to a fair law on this subject, and it is enough to say that the organized forces of agriculture in Colorado are behind this proposition. The farmers backing it hope to have inspection made a part of the duties of the State Experiment station and to equip that station with a seed-testing laboratory. In this way the law will make use, very largely, of existing machinery for enforcement, and will put administration into impartial hands, giving the farmers governmental supervision of their seed supply.

Those who favor such legislation should immediately call upon or write to their representatives and senators and urge them to get behind the measure. There is no time to lose. Every bill of this kind that comes before any legislature is cutting into somebody's ill-gotten gains and the interests profiting thereby will be on the alert. The farmer will have to get busy if he wants this protection. Let Western Farm Life know if you favor a pure seed law. We will carry the news to the proper committees of the legislature and stand behind any effort that really aims to protect the interests of the farmer.

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The Farmer's Opportunity

Farm property of the United States, according to the census of 1910, was valued at forty billions of dollars. On this vast value there is loaned only three and one-half billions of dollars. Interest plus commissions on these loans range from 5.3 to 10.5 per cent. The average rate in twenty states is 8 to 10 per cent. Under rural credit systems in effect in Germany, France, Norway, Denmark, Great Britain and Australia, the prevailing farm loan rates are 3½ to 4 per cent.

The rates on commercial paper in the United States are as low as in Europe. The business man in this country has equal facilities with the business man of Europe. The farmer of the United States has been bled by the usurer because no credit system based on land security was provided.

We now have the Federal Farm Loan law. The year 1917 marks the beginning of its actual operation. Congress has placed in the hands of the farmer the means to finance his operations. The law is co-operative in spirit and letter. It calls for the exercise of the community spirit. It opens to the farmer for his use in improving his land the funds of the investing public of the whole nation, backed by the stamp of governmental approval, but it demands collective action in taking advantage of this capital.

Co-operation in rural credits is necessary for two reasons: it makes the system an impregnable financial bulwark supporting farming operations, giving that industry a credit foundation that can neither slip nor sink. It elevates farming to a new plane that will give rural industry a commanding influence in world affairs superior to the influence of our present commercial structure. In submerging individual desires in the common good the farmer will benefit the whole structure of his industry. Such co-operation will solve our vexing marketing problems. It will give the farmer control of the financial machinery to move his crops. He will have the right to call for credit when he needs it and the assets to insure a prompt response from money.

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International Too Big

According to the Breeder's Gazette the International Livestock Show is outgrowing its clothes. "It requires no prevision to view with concern the inevitable expansion of this exhibition. Already it is stretching its skin." So says the Gazette. The International is fittingly placed at Chicago, the world's greatest livestock market. But times are changing. The minor markets are each acquiring a specialty. Denver is peculiarly favored as the gateway to the range country, the only region in the United States that will always have vast areas of land more valuable for grass and water than for cultivation. This will give us permanently the greatest feeder market. Here, too, is the region that offers the breeder unusual incentive for pioneering effort—climatic conditions that make lung power, heart girth, stamina, bone and red blood. Our western breeders are taking established strains and giving them added worth thru the favorable environment, and it is the Denver show that gives them the first and best opportunity to exhibit these results produced under conditions of climate and feed differing radically from those prevailing in the cornbelt lowlands.

So if the International is "stretching its skin" it has about reached a limit beyond which a show loses in educational value by the rush of mere numbers. The National Western is still expanding, and it will take care of the overflow from the mother of American stock shows. The cornbelt should be informed, in a more systematic way, of what our western breeders are doing for the industry and what the opportunities are in an educational as well as a commercial way by visiting the National Western, where the standard breeds not only of beef but also of horses, sheep and swine, may be viewed from a new and interesting angle.

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A No-Corn Grand Champion

Barley, oats and bran was the combination that put California Favorite in shape for the grand championship beef at the International Stock show last month. He was bred, fed and exhibited by California University. He went to the packers at $1.75 a pound, or $1,960 for the animal. The significant feature, which is not being emphasized by the cornbelt journals, is the fact that he did not get an ounce of corn during the thirteen months of his life, yet he had a weight of 1,130 pounds in the sale ring and was pronounced by the judge as absolutely without flaw. Beef producers in the Rocky Mountain states know how to finish them without corn, and it is gratifying to have such an effective and unqualified endorsement of the no-corn method as that represented by the 1916 grand championship.

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Watch the Orient

Are the pinto bean growers of Colorado and New Mexico aware that canning firms are importing beans from China? At least two Michigan canners have been receiving their product from the Orient this year. While the importations are of the kidney bean type, fit only for canning purposes, the fact that they can be laid down in the center of this continent after an ocean voyage of a month and a rail haul of 2,500 miles at less than the Michigan growers can furnish them, is sufficient to cause growers of all kinds of beans to sit up and take notice.

These beans are grown in Manchuria by orientals who live on ten cents a day. The American farmer cannot meet such competition. It is not enough that we deplore the policy of the canners in their effort to upset an established industry that has suffered from temporary crop shortage. That isn't the remedy. This is a place where the consumer can help. We feel sure that if he will not look at the matter from the economic standpoint, we can get at him from the sanitary side. Americans are just a little bit careful about the origin of their food. We doubt whether the Chinese product will meet with favor. When we want an adventure in oriental food we can buy direct in the chop suey kitchen and eat it with the sticks. Let's keep it out of the great American tin can. That institution is too sacred to be invaded by the heathen.

Anyhow we shall have to keep an eye on those orientals. Only a year ago Japanese ships were bringing grain of the kafir type to California in their holds as ballast and selling it to chicken feeders at almost nothing. This crowded Oklahoma and Texas kafir and milo off the coast market. There is food for thought and action in these circumstances.

KEEP YOUR BACK NUMBERS

Do you keep the back numbers of Western Farm Life? If not, you are losing some valuable material. A good farm paper is not a newspaper in the sense that its material is a record of events which lose interest after the first reading, but it is a publication that aims to give its readers not only the agricultural news—the latest developments in theory and practice—but also the methods that work well year in year out, in handling livestock or crops under the conditions prevailing in the territory served by such publication. Western Farm Life does this for the farmers of Colorado, New Mexico, Wyoming, Utah and Idaho. If you have not been laying your papers aside for reference, begin with this issue, for you will find it worth while.

The year 1916 brot you information and advice on many topics, some of which have been of interest to all of you. Take the series of articles by E. R. Parsons, rated as one of the world's foremost authorities on the theoretical and practical side of dry land farming; these alone in the past year, if you have saved the issues, constitute a treatise on the subject of moisture conservation and crop production under limited rainfall that is worth many dollars to farmers, whether on dry or irrigated lands. And the series will be continued, one article appearing in every other issue during 1917.

Then we have had a series of articles on hog raising by E. W. Ferguson, a practical hog raiser who knows the business, which have been useful to thousands of our readers. There were several articles by Prof. E. J. Iddings, dean of agriculture of the University of Idaho; by Prof. Alvin Kezer, chief agronomist at Colorado Agricultural College; others by T. S. Parsons of Wyoming University, and numerous contributions by practical farmers who wrote from their own experience for the benefit of others.

Since last August Western Farm Life has been conducting a persistent campaign of information in regard to the Federal Farm Loan Act, our readers having the benefit of advice directly and indirectly from Frank N. Briggs, a Denver banker, and Lou D. Sweet, a well-known authority on rural credits.

Let us not forget our old Missouri friend, Farmer Putnam. While he does not aspire to the title of expert, nevertheless there has been much of value in his homely philosophy and shrewd observations—enough we think to justify our readers in laying aside their copies during 1917 for future reference. Some time Farmer Putnam will get around to your section of the country and if you read him regularly you will feel like you are already acquainted when he makes his call.

Progress has been the watchword in the past, and more progress is our promise for the future. A look back is not a true forecast for 1917; it means that we shall do better. There will be more articles of a practical nature. Our recent announcement of a poultry department under the direction of Mr. Vaplon evidently struck a popular chord, for letters of inquiry are coming in from many subscribers asking advice regarding their flocks. Every letter receives the personal attention of our poultry expert.

Our Service Bureau has been of practical value to hundreds of farmers who have taken advantage of the opportunity to ask questions about their problems. This department has been strengthened. Every inquiry receives careful attention and a prompt reply by letter, while a representative number of questions and answers are published in each issue as a matter of general information. Keep your back numbers, for some day you will meet a problem that has been touched upon in the columns of the Service Bureau, and the answer will be ready for you.

Arrangements have been made for much useful material for 1917, but the best articles will be those that arise on the spur of some agricultural emergency. No advance announcement can give you an adequate idea of what is in store. Depend on this: Western Farm Life will continue to be eyes, ears and mouthpiece for the farmers of the Rocky Mountain region, to acquaint you with all that is helpful and constructive in the development of the system of agriculture that you are following. Our editors are western men and women, thoroly familiar with western conditions, and their writings will be on topics directly applying to your farms and homes. If you have not been keeping your copies, begin with this number. You will be surprised at the amount of useful information that will thus be accumulated in the period of a few months.

W. S. Edmiston

General Manager.

Our Cover Picture

The little cowman and the big Hereford bull appearing on the cover, were snapped at the National Western Stock Show last January by Joseph H. Langer, staff photographer for The Denver Post. The youngster is proud of himself and he should be, for the whiteface he is leading shows class. Langer's camera did the subject full justice.

Comment by Farmer Putnam

TELLS THE EDITOR HOW HE WOULD ANSWER QUESTIONS FROM SUBSCRIBERS

Stove Prairie, Colo., Dec. 27, 1916.

DON'T it beat all what a feller has to do to earn his keep fur one of them farm papers? I don't no sooner set down to rest when along comes instructions from the editor to do some other fool stunt. Now he wants me to try my hand at answers to questions. He sez I don't have enough to do and I might as well help out in this work. He wants me to send him down a sample of some of my work so's he kin judge whether I ought to be promoted to be a real agricultural expert. Well, here's hopin' I suit him. This is about the way I'd do it:

Question: I want some advice about growing wheat and oats. How deep shall I plow, and do you recommend spring plowing or fall plowing.

Answer: I recommend both wheat and oats. Both is good fur man or beast. The Scotch likes their oats rolled and cooked. Wheat is used mostly for flour, but flour is a luxury just now. About deep plowin', why suit yourself. If it was me doin' the job I'd say 7 inches is about the limit, but I ain't no professor or I'd say 17 inches. Plowin' is a good deal like this: If you do it yourself 8 inches is powerful deep. If it's your neighbor that's plowin' only 8 inches he's a shiftless, good-fur-nuthin' farmer. Now about fall or spring plowin', seein' it's January you better not wait till fall, but git in the ground as early after frost as you kin.

* * *

Question: I am a dry-land farmer, new to this country. Can you tell me something about the Mexican vanilla bean? Do you know what its habits are and whether they will mature in New Mexico?

Answer: As fur as I know the Mexican vanilly bean has no bad habits, but I believe you better stick to pinto beans. They are more drouth-resistant and more nutrichous. You dry-land farmers ought to develop a better market fur beans. Why don't you encourage bean-bag factories?

* * *

Question: I have a four-year-old colt that I want to sell, but it is lame in the left hind foot. What shall I do?

Answer: Bring the buyer up to the stall and try to keep him from havin' you trot out the so-called colt. This plan will work only if you try to sell him to a city man.

* * *

Question: Can you tell me what is the matter with my dairy cows? They have good appetites, look contented and sleek, and lay around all day in the sun chewing their cud, but they won't give milk enough to cover the bottom of the pail. Can you advise me what to do to get some revenue out of them?

Answer: Drive them to the butcher; they are probably dual purpose cows.

* * *

Question: We have been asked to subscribe $10,000 to a local creamery plant and the promoter wants us to guarantee the cream from 2,000 cows, give him a site for a creamery and pay the salary of a butter-maker. Do you consider this a good proposition?

Answer: It's a fine proposition; the finest I ever seen fur the promoter. All them creamery propositions is fine—fur the people that expects to make the money out of 'em. The farmers is supposed to git the glory and milk the cows.

* * *

Question: Can you tell me what's the matter with my chickens? They don't seem to lay. What shall I do about it?

Answer: You're lucky, neighbor. My chickens don't only seem not to lay, but they actually don't lay. I reckon you meant that yourn don't lay neither. Well, you cain't do nothin' fur it. Chickens is the contrariest critters on the farm. I believe they reads the market reports, fur every time eggs gits high they quits layin' out of pure cussedness. Some sez we kin make 'em lay by providin' summer conditions in winter. You might try that, if you're rich and foolish. Put woolen underwear on 'em, so's they'll have to scratch. Git each hen a nice red sweater and ear muffs, and moccasins fur their feet. Dress 'em up good and warm when they leave the coop and put a heatin' plant in the coop so's they'll be comfy at night. The feed is important. Give each hen a bucket of blood in the ration every day. Mix lots of oyster shells in the feed. I don't know what this is fur, but the experts says give 'em oyster shell and I'm passin' the word along. Be sure to git fresh oysters. Pry open the shell with a strong knife, carve out the oyster, throw it away and grind up the shells fine and mix with equal portions of grain. If you still have hens after tryin' this treatment and they still refuse to lay, consult Vaplon.

* * *

Legal question: A buys ten head of steers from B and pays $200 down and gives 6 mos. note for $300 balance. B sells note to C. A fattens steers in four mos. and buys auto with proceeds, paying part cash and giving D note for $250 on balance. On account of war A finds cost of tires and gas so high that he can't meet note on steers he gave to B and which B sold to C. He then goes to D and explains circumstances, asking him to trade in the car for a cheaper used car and cancel note given D. This D agrees to. On way home in used car, A bumps into C, holder of the note bought from B, breaking C's leg. C sues for damages, alleging that accident was a frame-up to kill him so that A wouldn't have to pay note he gave B, which B sold to C. A consults attorney, E, who advises him to fight case because he,E, needs the money. A gives mortgage on car to E as retainer fee, but before it is recorded C files attachment on car. What shall A do next?

Answer: The above has been referred to our attorneys for reply. (That's the way the editor does when a question sticks him.)

* * *

Question: I live half a mile from town and don't seem to be able to keep my chickens. I started out this year with a nice flock of a hundred and fifty and they keep disappearing. Do you think it could be coyotes?

Answer: Move farther from town and you won't have any more trouble.

* * *

Tells the Editor How He Would Answer Questions from Subscribers

Question: I am a Colorado farmer and while you don't offer to do anything except advise when stock is sick or crops don't do well, I'd like to have you tell me what's the matter with me. My appetite is good but for about a year now I have been troubled with a parched, dry feeling in my throat that I can't get rid of. What would you advise?

Answer: I ain't no doctor and don't like to give no long distance remedies without gittin' a chanct to diagnose your case, but answerin' off hand, I'd say they ain't no help for that trouble you got exceptin' you move to Cheyenne.

THOMAS JEFFERSON PUTNAM.

Best and Cheapest Service in the World

Here are some comparisons of telephone conditions in Europe and the United States just before the war.

Here we have:	*In Europe:*
Continuous service in practically all exchanges, so that the telephone is available day and night.	Nine-tenths of the exchanges are closed at night, and in many cases, at mealtime.
A telephone to one person in ten.	Not one person in a hundred has a telephone.
3,000,000 miles of interurban or long-distance wires.	Not one-eighth as many miles in proportion to population and territory.
Prompt connections, the speed of answer in principal cities averaging about 3½ seconds.	In the principal cities, it takes more than twice as long for the operator to answer.
Lines provided to give immediate toll and long-distance service.	No such provision made. Telephone users are expected to await their turn.

As to cost, long-distance service such as we have here was not to be had in Europe, even before the war, at any price. And exchange service in Europe, despite its inferior quality, cost more in actual money than here.

Bell Service is the criterion for all the world, and the Bell organization is the most economical as well as the most efficient servant of the people.

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TO

Denver *and* Cheyenne

BY WAY OF

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Meeting American National Live Stock Association
Cheyenne, January 18 to 20
National Western Stock Show, Denver, January 20 to 27

Dates of Sale

To Cheyenne, Wyoming

January 15, 16 and 17, from stations in Colorado south of Pueblo and west of Walsenburg and Canon City, all Utah and New Mexico stations, except Santa Fe, N. M.
January 16, 17 and 18 from all other Colorado stations.
January 15 and 16 from Santa Fe.

To Denver

January 19 and 20 from New Mexico stations south of Antonito and Durango, Colorado.
January 19, 20 and 21 from all other New Mexico stations and Colorado stations west of Walsenburg and south of Vance Junction, also from Thompsons, Westwater and Woodside, Utah.
January 20, 22, 23 and 25 from Colorado stations south of Denver to and including Trinidad and Walsenburg.
January 20, 21 and 22 from all other Colorado stations.
January 15, 16 and 17 from all Utah stations, except Thompsons, Westwater and Woodside, to Denver, Colorado Springs or Pueblo.

For further detailed information, call on any Rio Grande Passenger Representative, or address Frank A. Wadleigh, Passenger Traffic Manager, Denver, Colo.

The Western Farm Life Service Bureau

Our readers are invited to make generous use of the Query Department. Any questions pertaining to animal husbandry and general agriculture will be cheerfully answered. You are also invited to write us any experience that will be of interest to the farmer and stock grower.

In questions relating to diseases of live stock, you should be very explicit in descriptions and in autopsy findings, if such have been made.

Planting Beans

I would like to have your advice on planting Mexican and navy beans.—C. T., Pueblo Co., Colo.

Pinto beans are preferable to navies in most Pueblo county sections. They are preferable because they will yield better, can be grown more cheaply and sell for just as high a price, unless the navies are very carefully hand picked. If they are to be grown on dry land, they should be planted in rows about 3½ feet apart, using from 8 to 15 pounds of seed per acre, depending upon the dry land conditions. If they are to be planted under irrigation, they should be planted 28 to 30 inches apart, and use 20 to 25 pounds of seed.—Alvin Kezer, Agronomist, Colorado Experiment Station.

Flax in Eastern Colorado

Can you tell me thru your Service Bureau if flax can be profitably grown in eastern Colorado? Is there a staple market for the seed, and what are its chief drawbacks?—A. W. L., Prowers Co., Colo.

Flax is a well adapted crop to most of northeastern Colorado, that is, the section lying north of the Platte-Arkansas divide. Whether or not it is a profitable crop to grow depends upon seasonal prices. If a price of $1.50 per bushel or above could be uniformly received, it would be a profitable crop to grow. There is a staple, standard market for the seed. At present the linseed mills which would take Colorado product are located at Fredonia, Kansas, Kansas City, Sioux City and Minneapolis. At present there is no mill in Denver, although such an enterprise is a possibility.

The chief drawback to the crop in Colorado has been the uncertainty of the market. It is troubled some by disease, but disease may be controlled by crop rotation and seed treatment. Flax is not well adapted to such seasons as 1916, 1913 and 1911—seasons of excessive drouth. It is well adapted for such seasons as 1910, 1912, 1914 and 1915.—Alvin Kezer, Agronomist, Colorado Experiment Station.

Oldest Town in Colorado

What is the oldest town in Colorado? Was ever La Porte voted on for the capital of the state?—W. J. T., Weld Co., Colo.

(1) Denver, then Auraria, was the first organized town, if we omit certain Spanish-American settlements in southern Colorado, which were probably not organized other than as parishes of the church.

(2) No; Golden and Denver, after Colorado City, were early rivals in territorial days.

Contagious Foot Rot

I have some valuable ewes that eat too much corn. Some of them are scouring and some are stiff. What can I do for them?

I have a few lambs in a bunch of a thousand. that have one or more feet festered between the toes and the feet are swollen and feverish. Can that be foot and mouth disease?—G. W., Montrose Co., Colo.

If too much mince pie makes a man sick, the best thing he can do is to eat less pie. The same thing applies in feeding sheep. The diarrhea indicates that nature is throwing off the surplus. Lamb feeders are losing from one to three per cent of their sheep from overfeeding. A change of feed, or too heavy feeding early in the season is dangerous.

There is a contagious foot-rot that sometimes affects sheep and is serious. The sheep that have sore feet should be caught and treated individually. After cleaning out the wound and washing it with three per cent creolin solution, apply a dressing of pine tar. In foot and mouth disease there are blisters on the feet and in the mouth. It will be well to be on the safe side. Call your veterinarian.—G. H. Glover.

VETERINARY INQUIRIES

Is there any cure for bog spavin on horses?—L. H. S., Prowers Co., Colo.

Bog spavin is usually associated with a weak hock. In a young animal with a good hock recovery may be expected. Remove the shoe; long rest, from heavy work, fomentation followed by mild blisters. As long as we breed horses that have spavins, ringbones, sidebones and such defects we will have them. Why not breed such mares to a jack?—Geo. H. Glover, Colorado Agricultural College.

Cow Has Diarrhea

Will you please tell me what will stop the diarrhea in a cow? My cow has been sick for a week with diarrhea.—F. A. P., Elbert Co., Colo.

The cause is probably associated with the feed but might be from specific infection. Spoilt feed of any kind, especially if moldy, will cause diarrhea and other symptoms. Do not consider cured until you have removed the cause, if possible. If you cannot secure the services of a veterinarian, the following might be tried: Equal parts spirits of camphor, tincture of opium, tincture of rhubarb and oil of peppermint; mix and give one to three tablespoonfuls in 6 ounces of water every three hours.—Geo. H. Glover.

Examine Teeth

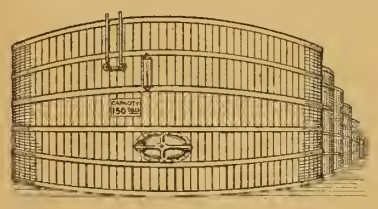
I have a mare five years old that seems to be ill. I worked her some on the plow early in the fall, and she got thin and hasn't gained flesh. She has been running in the field with the rest of the horses, and they have all fattened up but her. Is there anything I can do for her?—F. J. D., Montrose Co., Colo.

Examine her teeth; perhaps she is starving. It might be "swamp fever." You have a competent veterinarian at Montrose; why not consult him?—G. H. Glover.

Consult a Veterinarian

Will you please tell me what ails my cow? She is six years old, has run on good pasture all summer, has been dry since July 2nd, and is real thin, and is the only one in the herd that is not real fat. She was due to calve about the middle of December, and on November 29th dropped two calves; one died in a few hours, the other is still living, but she gives no milk, not more than a teacupful per day. For a month or so she has had a ridge swelled from her chin clear along under her to her udder. She eats but very little and when she coughs she runs her tongue out and breathes hard.—E. H., La Plata Co., Colo.

The swelling may be dropsical and caused from pleurisy, tuberculosis, or any debilitating disease. Examine the



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These TANKS are 6 feet high and have a diameter of 12½ feet at top and bottom, and a capacity of 150 barrels. They are built of Oregon Pine, 2-inch staves, have 6 hoops. These Tanks are in good condition and will last many years.

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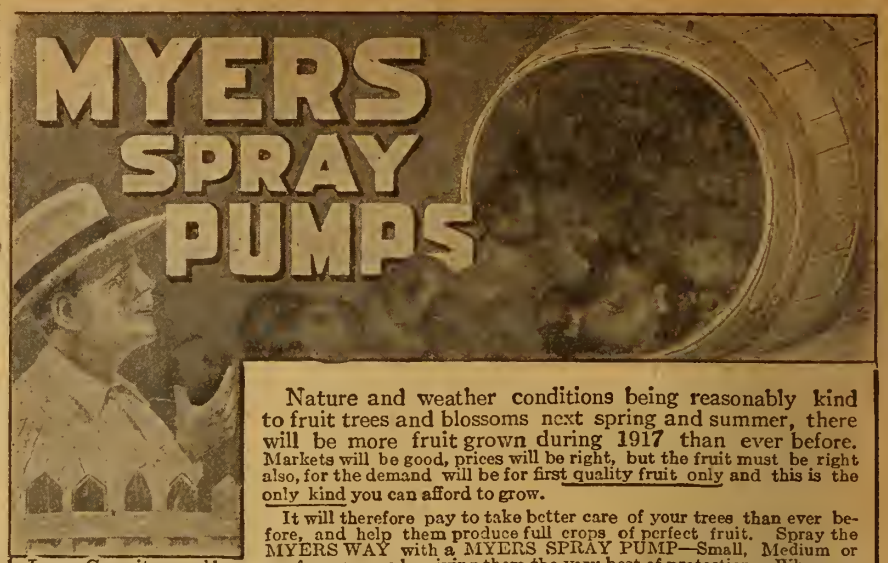

Nature and weather conditions being reasonably kind to fruit trees and blossoms next spring and summer, there will be more fruit grown during 1917 than ever before. Markets will be good, prices will be right, but the fruit must be right also, for the demand will be for first quality fruit only and this is the only kind you can afford to grow.

It will therefore pay to take better care of your trees than ever before, and help them produce full crops of perfect fruit. Spray the MYERS WAY with a MYERS SPRAY PUMP—Small, Medium or Large Capacity—and be surer of your crops by giving them the very best of protection. Where extensive orchards or vineyards are to be sprayed we recommend the new MYERS AUTOMATIC POWER SPRAY PUMPS and OUTFITS, as being economical and the most efficient of any on the market. For spraying smaller orchards, shrubbery, gardens, etc; for disinfecting, painting or whitewashing—for general use, Myers Easy Operating COG GEAR BUCKET and BARREL OUTFITS are unexcelled—Every Myers Spray Pump, Hand or Power, is tested, proven and guaranteed.

Catalog showing complete line, with valuable spraying information, mailed promptly to anyone interested in fruit growing.

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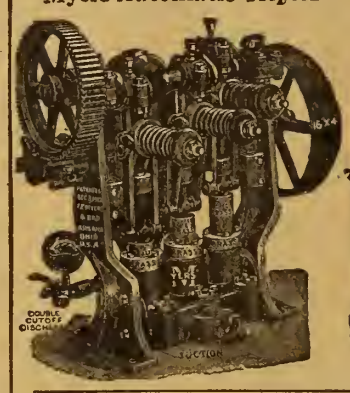

New Myers Automatic Duplex Power Spray Outfit

100, 150 or 200 Gal. Tank

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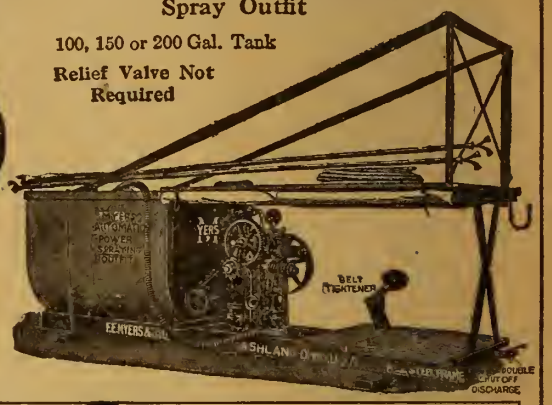

F. E. MYERS & BRO., NO. 120 ORANGE ST. Ashland, Ohio

Dry Beet Pulp for Feeding

Great Western Sugar Company's Expert Says:

The pulp in the Gering, Neb., factory of the Great Western Sugar Co. is going to be dried. Wet, fermented pulp as fed, for instance, at the Scottsbluff factory, contains about 90 per cent water. In other words, in every ton of wet pulp handled there are about 1,800 pounds of water. When the pulp is dried it contains about 10 to 15 per cent water, or the same as other normal dry farm products, like alfalfa, hay, corn or barley. It therefore can be hauled for much longer distances than the wet pulp. Also it can be stored like any other grain, without deterioration.

An unfortunate consequence of feeding wet pulp has been that it had to be fed in the vicinity of the factory and the resulting manure accumulated around the factory, instead of on the more distant farm, where it is badly needed.

Dry pulp as a food for various classes of animals is not an experiment. In Germany about 70 per cent of all pulp from about 20,000,000 tons of beets, was dried before the war and now virtually all is dried, partly with and partly without molasses. The dry pulp is fed to cattle of all kinds, to sheep and also to horses.

Dry pulp is a food similar to corn; that is, it is valuable mainly for its fattening, but not meat making qualities. Wherever corn or barley has been used in a ration, part of it can be replaced with good results by dry pulp. Where animals are fed on a food deficient in fattening, but with ample meat making qualities, for instance, alfalfa alone, an addition of dry pulp will make a better balanced food and the animals will show better gains.

As the pulp has been fed in the United States mainly to dairy cattle, we advise trying it first on those. Pulp will not increase the per cent of butterfat, but will produce a larger flow of milk, particularly when cows get much alfalfa and little or no concentrates. Where corn silage is used, it is advisable to use a little less of it when dry pulp is added. From 6 to 10 pounds of silage may be replaced by one pound of dry pulp.

The dry pulp might also be tried on horses. As a large number of farmers have to buy oats at not less than $1.25 per hundred pounds, a cheaper food is of some economical importance. The German army horses are fed dry pulp, and a great number of work horses on beet farms have been fed with it a long time. It is therefore no experiment.

The dry pulp will be sold at $17 per ton, or 85 cents per hundred pounds, f o. b. Gering, Neb. Dry pulp can be used in conjunction with alfalfa wherever grains like corn, barley or oats have been used. It should be used, at least in the beginning, only as a part of the grain given. If the animals do well and take to it, there is no reason why they cannot be given all they will consume.—H. MENDELSON.

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AMERICAN SHEET AND TIN PLATE COMPANY, Frick Bldg., Pittsburgh, Pa.

mouth carefully; there may be actinomycosis of the tongue (wooden tongue) or there may be some foreign object like a needle in the tongue. Look for ulcers in the mouth and patches on the tongue, denuded of mucous membrane. Foreign objects, like wire, needles, etc., frequently pass from the third stomach through the diaphragm into the chest cavity and cause an edema such as you have described. Again there may be a laceration of the neck of the womb, or a catarrh of the womb, following premature parturition. Brisket disease, which is a heart exhaustion in high altitudes, causes a swelling such as you have described. Send to the Experiment Station for bulletin on brisket disease if you suspect this disease. Without an opportunity to make an examination I can do nothing more than make the wildest kind of a guess as to the nature of the disease and to suggest treatment is useless. Get a veterinarian to see her if possible.—G. H. Glover.

LEGAL QUESTIONS

The following questions regarding legal matters have been answered by Peters & Barker, Attorneys, Equitable Building, Denver, Colo.

Can Deed Direct?

Can a man deed a farm to his wife direct, or thru someone else?—C. E. D., Yuma Co., Colo.

A man can deed a farm direct to his wife, but it is the better practice to deed the land to a third party and then have them make the deed to the wife, particularly where it is homestead land.

Cannot Store Water

Has the owner of a reservoir the right to store water during the irrigation season, when the water is needed for direct irrigation?—T. P., Garfield Co., Colo.

The owner of the reservoir has no right to store water during the irrigation season when the water is needed for direct irrigation.

Apply to the Court

I, in company with two others, own a ditch with adjudicated water rights. We wish to abandon this ditch and transfer our water right to another which has been in operation for several years, and is taken out of the same stream about a mile further up, there being no ditch between these two. Will you please tell me how we can make this transfer according to the law if the owner consents? If he refuses, we paying for necessary enlargement of ditch and headgate.—M. S. B., Arcbuleta Co., Colo.

It would be dangerous for you to abandon your adjudicated water rights without going into the district court of your county and taking proper proceedings there by filing a petition for an order of court to change the point of diversion of water. Such proceedings would have to be taken for you by an attorney.

Consult an Attorney

I would like to know if I am able to put a labor bill in against my parents, being but nineteen years of age last March. My parents have rented an 80-acre farm and I have done all the work on it and as the farm is run down they did not make enough to pay the rent; I would like to know if I could not get my wages before the rent. I would also like to know if the man we rented of is able to take anything away from us that we intend to keep for food this winter. We have signed a crop contract and have only thirty sacks of potatoes, which is only enough for us this winter. Can he take any of these?—C. D., Idaho.

Your rights depend entirely on the contract that was made with the owner of the land. I cannot answer your question without seeing the contract. Whether you could get your wages or not ahead of the rent would also depend somewhat on the contract. You had better take your contract to your local attorney and have him examine it.

Cheap Pork on Field Peas

Continued From Page 5

those in the field not hurdled required 302 pounds of feed, and those in the dry lot required 615 pounds to make the same gain. The experiment was carried on during some of the coldest winter weather, otherwise gains from the pasture would probably have been better.

When the pastured pigs were taken from the field and put on a full ration, they gave better results than those that had been on full grain ration all the time without pasture. When on full grain feed those that had been in the hurdled pasture required 494 pounds of mixed feed to make 100 pounds gain; those from the unhurdled pasture required 479 pounds, and those in the dry lot 546 pounds for the 100 pounds' gain.

Some interesting deductions may be made from the results of these experiments. Both pasture lots made better gains than those that had been fed on grain continuously, and considerable saving in grain was made. Stated on the basis of one acre as the unit, the hurdled pasture saved 2,086 pounds of grain and the unhurdled pasture saved 1,568 pounds.

Three hundred sixty-five pounds, or about 59 per cent less grain was required for 100 pounds gain when pea pasture hurdled replaced one-half the grain ration. About 51 per cent less grain was required when the unhurdled pea pasture was used to replace one-half the grain ration; and there was approximately 17 per cent gain in the saving of the hurdled over the unhurdled pea pasture. The hurdling effected a saving equal to 518 pounds of grain per acre.

These experiments prove conclusively that pea pasture is a valuable aid in the production of cheap pork, and that good financial returns can be obtained from such pastures.

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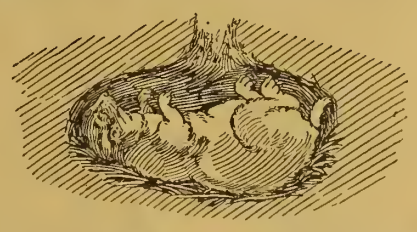

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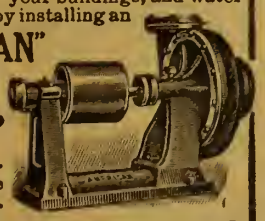

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Moisture and Crop Production

EXPERT SHOWS RELATION BETWEEN THE TWO

E. R. PARSONS

IN the physiology of plant growth the chief function of water is that of a carrier. The mineral elements needed by vegetation are that portion of the soil which is found dissolved in water; in other words, the soil solution. This solution containing the necessary mineral salts, is taken up by the root hairs as a clear fluid and mingles with the sap, which circulates all thru the plant. At the same time the leaves are taking up carbon from the carbon dioxide of the atmosphere and transpiring into the air all the surplus water, leaving the mineral matter in the plant to assist in conjunction with the carbon in the metabolic processes which we term growth.

Testing Plants for Moisture Requirements at Akron, Colo., U. S. Experiment Field Station

The transpiration from the leaves of plants is analogous to perspiration in man, throwing off the water after it has done its work and at the same time cooling the plant, and even the air which comes in contact with the leaves. We find by experiment that it requires from 200 to 400 pounds of water to carry up enough mineral matter to make one pound of grain or other vegetable matter weighed in the dry state.

The amount of water needed varies according to the soil and the crop, some plants requiring more than others. If the soil is rich and well fertilized by the up-to-date farmer, a more concentrated solution is formed and it requires consequently much less water to carry the necessary mineral matter; therefore in this kind of soil it might require only 350 pounds of water to make a pound of corn, while in poor soil 500 pounds might be necessary. The moral of this is that good fertilization may be as valuable to the dry farmer as several inches of rainfall.

Figures Only Approximate

The figures given by different experimenters representing the amount of water needed to produce a pound of dry grain or stalks, or other vegetable matter, can be taken only approximately, for local conditions of soil, climate, evaporation, etc., create considerable variations in the findings, but at the same time these tables show conclusively which crops need the most water and vice versa.

In our ordinary western soils about 400 pounds of water to one pound of corn may be considered a fair estimate. At the Akron Experiment Station they give 407 for Iowa Silvermine and 342 for Indian Flint, which is about the lowest. Allowing 400 pounds of water to a pound of corn, an acre producing 45 bushels will require about 500 tons, or about 4½ inches. Is it possible, then, to raise a crop of corn on 4½ inches of precipitation? It is not, owing to the immense amount of waste, but it is the purpose of advanced dry farming methods to eliminate as much of this waste as possible.

First we have to allow for the unavailable 6 per cent, which represents the percentage of moisture remaining in the soil which the root hairs are unable to take up when the soil becomes too dry to support growth. Then comes losses by evaporation and run-off, the amount of which depends largely on the methods employed and the way in which the precipitation comes. When the soil is plowed deeply and properly prepared heavy, soaking rains may be nearly all saved; but light showers do not get below the top inch and cannot be saved because it is impossible to mulch them.

Half of Moisture Lost

On farms where the soil is not previously prepared for the accumulation of the precipitation at least half of it is lost by run-off and evaporation from the puddles on the surface, but on the other hand when the ground is prepared for quick absorption and the precipitation comes about right the farmer may save two-thirds. Allowing for the other third which is unavoidably lost and the unavailable 6 per cent, we find that altho it is necessary for only 4½ inches of water to be absorbed by the corn plant, in order to furnish this amount we must have a precipitation of at least 8 or 9 inches.

In order to obtain this amount for the crop, the safest way is to conserve at least half of it in the soil before planting. This is when fall plowing comes in, for if a winter precipitation of 5 or 6 inches can be conserved in the subsoil for a spring-planted crop, two or three inches more, or half the normal rainfall of the average growing season will mature it.

In the early days of our dry farming experiences in Colorado we discovered that in the spring of the year the soil in all of our fields in which nothing was growing carried about the same percentage of moisture according to quality. Our heavy clay loams would have about 17 per cent, the sandy loams about 15 or 16 and the sandy and gravelly lands about 14. We found by experiment that the reason was that it could not hold any more against capillarity and gravity, which take it and spread it out in the subsoil which, in the semi-arid districts, is always dry down below. Therefore as soon as the rains have ceased and the dry subsoil has had time to absorb all the free water, our soil content, until evaporation commences to work, or crops use it up, is always somewhere about from 14 to 17 per cent.

Soil Augur Is Necessary

After a winter with about 7 or 8 inches of precipitation the soil will be wet down about 3 or 4 feet in deeply plowed land, about 2 feet in shallow plowed land and stubble, and about 1 foot on the prairie, but the percentage will be about the same in all cases. After the farmer has once tested his soil and knows the per-

Continued on Page 17

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Swift's Digester Tankage

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Holsteins for the Dairy

Carlos W. Hall

There are about 70 members of The Colorado Holstein Cattle club owning probably 1,500 head of registered cattle. There are several breeders in the state who are taking high rank among the foremost breeders of the breed, while many are putting in registered animals because they find them more profitable from a dairy standpoint.

There is no doubt as to the quality of the Holsteins raised in the Rocky Mountain region and there is no danger of overdoing the business so long as one pays attention to the quality of his stock.

There is a vast difference in the quality of individual animals and it is going to take a considerable educational effort on the part of many who are going into the business before they have their standards set as high as it will require for them to demand a ready sale at advanced prices. Many so far only know that a black and white is a popular animal, and do not seem to realize that their are good Holstein and poor Holstein cattle. Official records and the leading fair exhibits are fast putting those right where attention is paid. The Western National Stock Show is the greatest educational institution along these lines. It will pay anyone well who is at all interested to attend this winter show. At the consignment sale held last fall under the management of the Colorado Holstein club a total of 139 head of registered Holsteins brought a total of $23,000, or an average of $171.00 per head. The sale contained many calves.

Many hold to the opinion that high records are made under abnormal conditions. This is not so. Two or three cows here in Colorado during the last year in official test have gone very near the top and their production has been under perfectly normal conditions. Their feed was entirely Colorado produced but properly balanced, as all feed should be to get best results. Proper attention should be paid to breeding, and to the proper feeds to be raised to make balanced rations. There is no doubt whatever but that this Rocky Mountain region can and will lead the world in the production of high class animals of the breed when the proper understanding and work go into the business, and the country will be the richer on account of building up instead of tearing down the fertility of the soils.

This state is fast taking high rank as a feeding state and as a breeding state which is as it should be, for geographically located as it is, a long distance from any large markets, and only railroad transportation, a finished product only should be freighted.

The Final Answer
To the Tractor Fuel Question

Every farmer knows that the best paying, most economical tractors are those that operate successfully on kerosene.

But every farmer can't tell a real kerosene tractor from an imitation before he buys it. It takes an expert to do that.

Neither does he want to take someone's word for so important a feature. That is not good business.

We believe that a farmer who buys a machine costing hundreds of dollars is entitled to get what he pays for. He should be fully protected in such an important purchase.

We **know** that **Titan** tractors are real kerosene tractors. They are **built** to operate on kerosene. They **operate successfully** on kerosene. When we sell one we **guarantee** it to operate on kerosene, **writing that guarantee into the warranty** that you get when you sign the order.

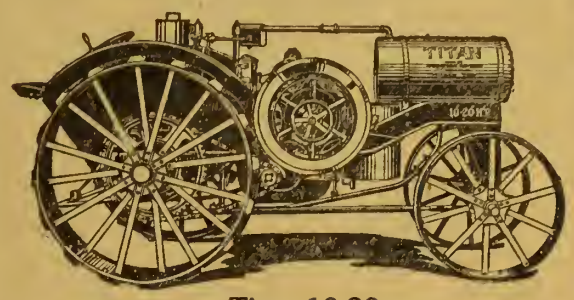
When you buy a **Titan** tractor you are **safe.** You have the **written guarantee of a responsible Company** that your tractor will do good serviceable work using common coal oil as fuel at all loads.

That is the final answer to the tractor fuel question.

Titan tractors are now built in three sizes, 10-20-H. P., the 3-plow outfit; 15-30-H. P., for 4 and 5 plows; and 30-60-H. P., for the heaviest work of the largest farms. All operate on kerosene.

The 10-20-H. P. size is recommended for all kinds of farm work within its capacity. It is a two-speed tractor, 1.85 and 2.50 miles per hour, with a smooth running twin cylinder engine, slow speed, mechanically oiled, starting and running on magneto. It can be used for any field work you would expect nine or ten horses to do, and it will run any machine that takes up to 20-H. P. at the belt.

If you place your order soon you can have a **guaranteed Titan tractor** for the heavy Spring work. Start now to get acquainted with this dependable line of tractors. Drop us a line so we can send you full information at once. Don't wait. Write now.



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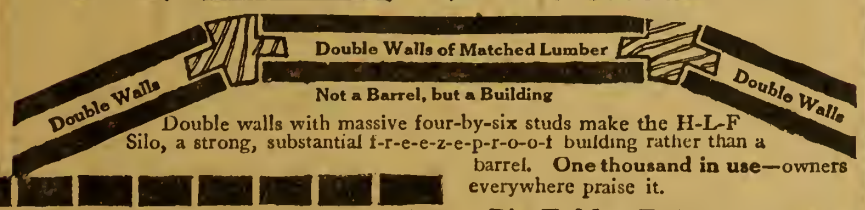

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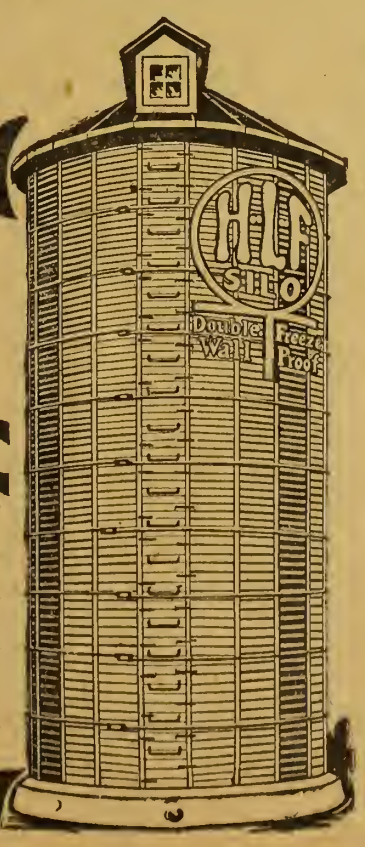

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Low-priced, fresh, reliable; preferred by western stockmen, because they protect where other vaccines fail.

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Use any injector, but Cutter's simplest and strongest. The superiority of Cutter products is due to over 15 years of specializing in VACCINES AND SERUMS ONLY. INSIST ON CUTTER'S. If unobtainable, order direct.

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Farm Woman and the Home

On the recent tour of the Rock Island Lines Cash Crop Special in eastern Colorado and western Kansas one car was reserved for lectures to women. Three women and a man were assigned to this car. Kansas Agricultural College was represented by Mrs. Mary Pierce Van Zile, dean of women, whose inspirational talks deeply interested the women who came to hear, and Miss Mary Baird, who gave her auditors much of practical value to be applied in the household. The representative of Colorado Agricultural College was Miss Marjorie Shutt, who was asked by Western Farm Life to write her impressions of the tour, which she has done in an entertaining way. The poultry lecturer was Mr. P. H. Edwards of Colorado Springs.

Marjorie Shutt

THE actual work of the Rock Island Lines Cash Crop Special is done, but we hope the results are only just beginning. The interest aroused among the women was great. Women and children came into towns along the line from farm homes twenty-five miles out. Where we had meetings as early as nine in the morning we found women who had ridden two or more hours to hear talks we had to give them. The days were cold and a snowstorm had swept the country, but it did not deter the women from coming to the meetings. Such gatherings of interested and intelligent women should have inspired any workers to renewed enthusiasm for their work.

To describe the women who came to hear us would be to enter all walks of life. We had the happy wife of the successful farmer who had a comfortable home matching ours in the city for modern conveniences; we had the lonely maiden lady homesteading on her isolated quarter in her one-room lean-to, and we had the brave woman from the Mississippi valley who, as she told me, brought out her husband on a stretcher that the Colorado climate might restore him to health. Then we had all levels in between. The college-bred woman who felt that her place was in the home, no matter where that home, and the untrained girl who longed for city life, both visited the train. Many were women homesick for former haunts and some were natives of the plains, but all showed faith in and loyalty to the dry land region.

The women were pleased to get together, to see new faces and perhaps, true to woman's nature, to see new styles. One could see the feminine love of finery. Nearly all had some bit of decoration—a colored satin and lace boudoir cap, a bright tie, a crocheted or tatted collar; something to show that even if they had to perform the hard work of the farm woman, the feminine instinct still cropped out.

The babies were a source of interest to us, and such lovely baby visitors as we had! All sizes, ages and complexions, from dark-skinned little Mexicans to fair-haired, blue-eyed Germans and Scandinavians. The older children, too, were splendid and so interested in coming to us, tho most interested, I must confess, in our Pullman push buttons that rang the bells for porters. The children, one could easily see by the school buildings and teachers, were receiving the best educational advantages. Our more populous districts have reason to feel ashamed of what they are doing when they view the school buildings of the plains country.

And now a few words as to what the people in the women's car tried to tell their guests. First there was a talk on poultry, and when the women were told, "There is more money to be made from $100 worth of chickens than from any $100 cow I ever saw," you should have seen their interest, showing, of course, that women as well as men are interested in the powerful dollar.

Most of them had chickens, and I think that those who did not went home determined to invest at once. The questions at all the stops were much alike and it did seem good to hear them asked, as it proved interest. It still seems rather strange to hear women asking for a "balanced ration" for their hens, and we heard it often. I was much surprised at the technical knowledge of food principles and food values which the women showed. Chicken pests evidently also cause much anxiety, but I think by now all the lice are getting a dose of blue ointment and the mites a spray of zenolium and the hens are free and happy.

Next we showed them the much-harped-on balanced ration for family meals, trying to prove that for efficiency in cows, hogs and chickens, so for efficiency in the human, proper feeding is a prerequisite; that not greater expense but greater thought is a chief necessity. The questions here were interesting: "If my family likes rice and is satisfied with rice only, three meals a day, why not rice?" Prunes were discussed, passed and approved.

The subject of lightening labor was taken up, showing how by rearranging the kitchen furniture, or by slight alteration in the heights of tables, sinks and stools the housekeeper could save work. Steps soon grow into miles and three inches off the legs of tables may save many a backache. Charts had been arranged showing the divisions of the hours of the day into work, rest and recreation and other charts proving the wisdom of discretion in the purchasing of utensils.

Here the practical gave way to the inspirational and the sympathetic expressions on the faces of the older women proved that they were getting that for which they were truly grateful. It has come strongly to me that often perhaps we give to these women who come to hear extension workers talk too much of the practical and neglect the inspirational. Is it not perhaps true that the practical is too much a part of their lives and that, what they really need, may be just an ideal or two to give them a reason and a cause for their labor? A thought of something higher to carry back to their homes, to think over and to use as an antidote for loneliness? It is the exceptional woman who can deal with the inspirational satisfactorily, but when one heard the women repeat time and again, "I wish I could shake hands with that last woman who spoke," there was no doubt as to the result of the talk.

We of the party learned much and trust we gave a little. We hope that if the Rock Island sends again into eastern Colorado and western Kansas a "Special," the people who came into the women's car will be as glad to see us again as we should be, if allowed to come to them.

Hints

Use the egg-beater to beat up the thickening for gravy, it will never be lumpy.

In making corn-meal mush, sift the meal into the water just before it boils; it will be perfectly smooth and will not bubble up and scald the hand that stirs.

Western Stock Show Association

Informs us that, judging by the entries already made of all kinds and classes, the 1917 Show, January 20th to 27th, will be the best and most important yet held in Denver—from the breeder's, the buyer's, the farmer's, the horseman's, the pleasure-seeker's and the manufacturer's viewpoints.

Allow Us to Remind You

That this is a splendid opportunity for you to come to Denver, because of the one-fare railroad rates in this territory, and plan to do the shopping for your own and your neighbors' families, if you are so disposed, both to care for present needs and for the Spring.

Great quantities of Spring Merchandise will be ready at that time, in addition to the final clearance sales of winter things.

Parcel post, Express or Freight charges paid on all your purchases at retail to any point in the United States.

Come! Make yourself known and accord to us the pleasure of serving you in some way.

"The Thorobred Store"

The A. T. Lewis & Son Dry Goods Co.

Sixteenth and Stout Streets

DENVER

GASOLINE LIGHTS

Cheapest Light on earth for use in farm homes, stores and halls. Send us dimensions of your home. We will give you estimate cost of lighting system for same.

Agents wanted

ALBERT LEA GAS LIGHT CO.

Denver, Colo.

Wood Churns Unsanitary

Send for our literature on our new steel churns. Absolutely sanitary, easy to clean, made of seamless heavy steel; will last a lifetime.

BEATRICE CREAMERY CO.

Dept. 10, Denver, Colo.

Washing Machines, $8.50 UP

Save money on washing machines, hand or power. Our gasoline engine power machine shown here is fully equipped with pulley, reversible wringer, etc. Tub sets on strong iron base, with space for extra tub. Price complete only $27.20. Get our new FREE 400-page Catalog and 48-page Grocery List. Address

GENERAL MERCANTILE CO.
"The Great Mail Order House"
727 S. Ninth St. OMAHA, NEB.

"ROUGH ON RATS" ends RATS, MICE, Bugs, Don't Die in the House. Unbeatable Exterminator. *Ends* Prairie Dogs, Gophers, Ground Hogs, Chipmunks, Weasels, Squirrels, Crows, Hawks, etc. The Recognized Standard Exterminator at Drug & Country Stores. Economy Sizes 25c. 50c. Small 15c. Used the World Over. Used by U. S. Gov't. Rough on Rats Never Fails. *Refuse ALL Substitutes.*

The Million Dollar Live Stock Show

Eleventh Annual National Western Stock Show
Union Stock Yards, Denver, January 20-27, 1917

The Great Midwinter Exposition

Fat Stock Show **Breeding Stock Show** **Dairy Cattle Show**
Horse Show **Car Lot Show** **Baby Show**

$30,000 In Premiums
Many New Features

Saturday, Jan. 20—Inter-Collegiate Students' Judging Contest.
Monday, Jan. 22—Opening of Stock Show and Horse Show.
Wednesday, Jan. 24—Sale of Registered Galloway Cattle.
Thursday, Jan. 25—Public Sale Hereford Breeding Cattle.
Friday, Jan. 26—Public Sale of Registered Shorthorn Cattle.

There will be more than 2,000 Choice Breeding Bulls of the Leading Beef Breeds on sale during Show Week. Bulls can be purchased in car loads or in single individuals for herd-headers. No such opportunity anywhere in the world.

Grand Horse Show Every Evening.
Innes' Great Denver Municipal Band with 50 Fine Musicians.
Athletic Contests in Special Program Saturday Evening, January 27.
Magnificent Horse Fair with Representatives of All Draft Breeds.
SWIFT'S GREAT SIX-HORSE TEAM.

General Admission 50 cents. Reserved Seats for Night Shows 25 and 50 cents Extra. Reduced Rates on All Railroads.

SELF-OILING WINDMILL
With INCLOSED MOTOR
Keeping OUT DUST and RAIN—Keeping IN OIL
SPLASH OILING SYSTEM
Constantly Flooding Every Bearing With Oil
OIL SUPPLY REPLENISHED ONLY ONCE A YEAR
DOUBLE GEARS—Each Carrying Half the Load
Every feature desirable in a windmill in the
AUTO-OILED AERMOTOR
Write AERMOTOR CO.
2550 West 12th Street CHICAGO

BIG TREE LUMBER
DIRECT FROM HEADQUARTERS
Big Tree Lumber—Old-growth yellow fir and red cedar cut from trees six feet thick.
Send carpenter's list today for freight-paid price.
Hewitt-Lea-Funck, 453 Funck St., Sumner, Wash.

$15.00 Sweep Feed Grinder. | $19.00 Galvanized Steel Wind Mill.
We manufacture all sizes and styles. It will pay you to investigate. Write for catalog and price list.
CURRIE WIND MILL CO.,
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New Ford Joke Book 1917
All the latest jokes on the Ford Auto. Hundreds of them and all good ones. Spring a new one on your neighbors. Large book with colored cover by mail, 10c
NEW ENGLAND PUBLISHING CO.
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Elastic Stockings
KNEE CAPS, ANKLETS, SUPPORTERS, ETC.
Quick service, fresh goods made to order on our own loom. Write today for measurement blanks.
The J. Durbin Surg. Supply Co.
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OUR PATTERN DEPARTMENT

All Patterns 10c Each

We can supply our readers with high-grade perfect-fitting, seam-allowing patterns at 10c each, postpaid. Full directions for making, as well as the amount of material required, accompany each pattern. When ordering, write your name and address plainly, tell us the correct number and size of each pattern you want. We agree to fill all orders promptly and guarantee safe delivery. Address all orders to WESTERN FARM LIFE, Pattern Department, 14th and Arapahoe, Denver, Colo.

1917—A Comfortable Negligee. Cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Requires 3 yards 44-inch material for 36-inch size. Crepe, lawn, flannel, flannelette, satin, challie, cashmere, taffeta and China silk could be used for this model. The fullness at the waistline may be gathered or left unconfined. The pockets may be omitted.

1521—Trim and Popular Suit. Cut in sizes 3, 4, 5 and 6 years. Requires 2⅝ yards 36-inch material for 4-year size. Striped galatea was used for this design with white linene for collar, belt and cuffs. This model is good for serge, cheviot, broadcloth, flannel, gingham, and

linen, corduroy and velvet. The blouse is cut in coat style, and finished with a wide belt and pocket flaps. The trousers are made with side closing.

1940—Smart Style on Popular Lines. Cut in sizes 34, 36, 38, 40, 42 and 44 inches bust measure. Requires 2½ yards 44-inch material for the underwaist and 3⅞ yards for the overdress for 36-inch size. This design is nice for serge, satin, taffeta, gabardine and broadcloth, and lovely for combinations of material. In blue serge, with waist of crepe in a matched or contrasting shade, the model will be suitable for general wear and also for more formal occasions. The sleeve may be finished in wrist length with deep cuff and added trimming, or in the comfortable short sleeve style, with turnback cuff.

1921—Simple, Smart Model. Cut in sizes 34, 36, 38, 40, 42 and 44-inch bust measure. Requires 6¼ yards 44-inch material for 36-inch size. Serge, taffeta, gabardine, voile, linen, drill, gingham, chambrey, seersucker and percale are all nice for this style of garment. The waist fronts show deep box plaits beneath pointed yoke sections. The sleeve may be finished with a hand cuff in wrist length or with a turnback cuff in elbow length.

1471—Simple, Serviceable Model. Cut in sizes, small, medium and large. Requires 5½ yards 36-inch material for the medium size. What housekeeper or home worker does not appreciate a "cover-me-all" apron of this kind? It is a simple style, good for gingham, lawn, percale, cambric, denim, cretonne or sateen. The fulness may be held over the back by the belt, that may be slipped under the front or may hold the front on the outside.

1938.—Smart and Up-to-Date Style. Cut in sizes 16, 18 and 20 years. Requires 4¼ yards 44-inch material for the underdress and 3 yards for the overdress for 18-year size. This style would be pretty combined in satin for the underskirt, crepe for the tunic and lace, net or tulle for the underwaist. The style is charming in its simplicity and especially adapted to slender figures. It could be made of gabardine or serge with contrasting silk for the waist.

HIGHER PRICES
Prices on most everything are going up. Goodness only knows where they will stop. Fortunately, we foresaw what was coming months ago and entered heavy orders for Shoes, Blankets, Canned Goods, etc., so now we sell our customers many items for less than retailers have to pay for them.
Money-Saving Catalog Free
Write for our late Catalog Supplement. It shows how to save 10 per cent or more on most everything. When writing, enclose a dollar bill with this ad and we will send you 5 lbs. of our regular 30c Coffee—none better.
BON-I-LOOK
1559 Blake St., Denver, Colo.

Letz Kriss Kross Plate for Fine Fast Grinding
They shear the grain instead of crushing it, requiring less power. The Letz is the feed mill that will grind all grain and forage crops fine as dust in one grinding—even corn with husk, alfalfa and oat hulls. Letz Kriss Kross Plate is known all over the country for fine fast grinding and long life. Ten days free trial. Write for free Feeding Book and Catalog.
LETZ MFG. COMPANY
113 East St., Crown Point, Ind.

COFFEE, 20c lb.
In 5, 10 and 15 lbs. sacks. Extra choice Rio Brand. Stores usually ask 7c to 10c a pound more. You can save money on hundreds of other items in our money-saving Grocery Catalog and new Big Book of Bargains. Just out. Write for free copy today.
GENERAL MERCANTILE CO.
"The Great Mail Order House"
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KEROSENE ENGINES
OTTAWA LATEST DESIGN
Durable, Powerful, Reliable, Massive. Built to last; to do hard, heavy work. Uses Cheapest Fuel. Pull ¼ to ½ horse-power more than rated. *3 Months Trial. Easy Terms.* Sizes 1½ to 22 H-P. Easy to start. No Cranking. No batteries. 10 Year Guarantee. Most practical engine ever built. Engine book free. A Postal brings it.
THE OTTAWA MANUFACTURING CO.,
1631 King Street, OTTAWA, KANSAS.

Live Items About Live Stock

Notes on the International

The International Stock show at Chicago was exceptionally strong in the breeder classes and in fat steers and hogs, tho somewhat weak in feeders. California was represented for the first time, showing two steers and pulling down with these the grand championship and the reserve champion. The grand championship went to California Favorite, a crossbred, Hereford-Shorthorn. His weight in the sale ring was 1,120 pounds and he sold at $1.75 a pound, going to the Sullivan Packing Company of Detroit. He cost them $1,960, the price of a load of cows.

This was the highest price ever paid in the sale ring for an individual show animal, the previous record being $1.50 per pound, paid in 1900 the first show year, for Advance.

The fat steers included some exceptional loads; no big steers, but there were short feds showing a gain of three pounds a day and exceedingly well finished. The yearlings were unusually good. The top load, an Angus lot from Iowa, owned by Ed Hall, sold at $28 a hundred, and averaged about 1,146 pounds. Wilson & Co., Chicago packers, were the lucky bidders. This also was a high record sale price, the next being $17, paid in 1906 for the Funk exhibit.

One of the noticeable features of the show was the way calves bought in Denver by feeders in 1916 brought the money, going from $15 to $20 a hundred.

Colorado got the top shorthorn in the sale ring, this animal being bought by the Maxwell-Miller Cattle Company of Steamboat Springs, who paid $6,600 for him. This was the two-year-old show bull, Maxwalton Pride 2nd, winner of first in his class, a Carpenter & Ross animal.

To the Allen Cattle Co. of Colorado Springs went first on senior bull calf, Western Star.

In the Hereford sale the top price smashed all records, $15,100 being paid for the junior yearling bull, Woodford 6th, junior champion of the show, from the herd of E. H. Taylor, Jr. The purchaser was Senator N. J. Camden of Kentucky.

The weather was fine and the attendance the best in the history of the show. Stockmen enjoyed the social side of the show—the mixing and exchanging of experiences—as much as anything. It was the first show in three years, due to the foot and mouth quarantine of the two previous winters, and the breeders and stock farmers generally were glad to be together once more. All the big breeders signified their intention of coming to Denver in January and we can look for a good representation. The show herds of the East are coming, and there will be a big attendance of feeders from the corn belt states.

The Department of Agriculture was represented, as were some of the Western agricultural colleges. President Henry Jackson Waters, of Kansas, and Dean Burnett, of Nebraska, were among the educators attending. and Illinois Agricultural College had an exhibit of an educational nature that was extremely interesting.

E. M. AMMONS.

Review of the Market

The livestock market during the past two weeks was more active than it usually is just before the holidays. Supply in all departments was good and there was a good, strong demand for everything offered.

Cattle prices held up well and the market was active from day to day. Anything suitable for the block sold readily to packer buyers and good, fleshy feeders were also in strong demand. The common light cattle were not so active and prices on these are not as strong as they were two weeks ago. Good range steers sold to packers around $7.35 to $7.75 and choice to fancy range steers sold up to $9.00, the latter price taking a carload of very fancy heavy steers from Wyoming about a week ago. A good many short fed cattle from the feed lots in territory tributary to this market were marketed at Denver during the last week or two and sold readily. Steers brought $8.25 to $9.25 for the desirable killers and good fed cows sold from $6.50 to $7.40. Range cows of good killing quality are selling from $6.25 to $7.00, with fair cows at $5.75 to $6.40. Bulls are bringing $4.75 to $5.25 and veal calves are bringing $9.00 to $10.50. Feeder and stocker trade continues active and the market in good shape. Prices are firm. Good to choice steers sell from $7.25 to $7.75 and fancy steers are quoted up to $8.30. Fair steers are bringing $6.40 to $7.25. Feeding cows in fair demand at $5.00 to $6.00, altho it is a little too late in the season for a strong trade in this division of the market.

Hogs are in good demand at strong prices. Supply the last few weeks is more liberal than it has been and packers bought everything offered readily. Good to choice hogs are selling here from $9.75 to $10.00 and fair light hogs from $9.50 to $9.75. Unfinished, rough hogs are selling from $9.25 down and pigs around $7.75 to $8.00 for good quality. Indications point to a liberal supply of hogs here for the next two or three months.

Sheep trade was active and the market in good shape. Prices advanced sharply a couple of weeks ago, but the market has eased off some within the past week, due no doubt to the holiday season when the call for mutton is not so strong. A great many sheep and lambs from the feed lots in northern Colorado and other sections of the territory tributary to this market are finding their way to Denver for sale and bringing highly satisfactory prices. Packers here are buying everything they can get and announce their intention of buying all of the fat sheep and lambs offered here in the future. Good fat lambs are selling from $12.00 to $12.50 and good fat ewes are bringing $7.50 to $8.00 Yearlings sold up to $11.25 and wethers up to $10.00. These prices are the highest ever known on the Denver market and local dealers expect the price to go considerably higher before spring.

The horse trade was rather quiet and little change in market conditions. Prices remain much the same. Local horsemen have made contracts for furnishing the French government with a large number of war horses.

FOR SALE, PERCHERON and BELGIAN STALLIONS

All ages and prices. Pasture-raised and full guaranteed.

SINGMASTER & WALKER, SIOUX CITY AND KEOTA, IOWA

Stallions and Jacks

One 2-year-old registered Jack and two yearling Jacks; all big, heavy-boned. One 2-year-old registered Percheron stallion. One Belgian stallion, grade. One standard-bred stallion. Colorado raised and acclimated.
JOHN E. BURNS, Louisville, Colo.

DAIRYMEN

If you are interested in more money for your cream, drop us a line—today.
Gingrich Produce Co.
Thirteenth and Curtis Sts., Denver

Shorthorn and Polled Durham Cattle

Valentine's Last, X12316; 452005 at head of beef herd. Claywood White, 427350 at head of milk type.
STATE INDUSTRIAL SCHOOL
Golden, Colorado

POLAND CHINA HOGS Eleck Baldwin's Western Nebraska Herd of big, smooth Poland China Hogs; 10 head of March and April Boars for sale. These are the tops of my spring litters. They are cholera immune and are priced to sell.
ELECK BALDWIN, Dickens, Nebr.

Missouri Bred Jacks and Jennets

Four to five years old. Fifteen to 16 hands high. Will show mules with anyone in the state. Must sell.
W. H. Wheeler Garden City, Kans.

Home-Bred Draft Stallions

Your choice $500, with the exception of two. Also mares for sale.
A. LATIMER WILSON, Creston, Ia.

BLUE RIBBON HERD

DUROC JERSEY HOGS
Everything Registered
Stock for Sale
C. F. BURKE, Rocky Ford, Colo.

BARGAINS Percherons, Belgians, Shire, Clyde, Suffolk, Hackney, Great Coach Stallions. Good Jacks. Time given purchasers.
R. I. LITTLE
Good Block Des Moines, Iowa

ABERDEEN ANGUS BULLS AND BERKSHIRE HOGS
Winners of 24 champions in 1914
See us before buying.
Sutton Farm Lawrence, Kans.

Milking Shorthorn Bulls

ALSO a few Jersey Cows for sale.
W. A. WIGHT Las Animas, Colo.

JERSEY CATTLE

We own and offer for sale the best bred and we think the best lot of Jersey cattle in Colorado or the surrounding states.

These are not culls. We price any animal we own and price it worth the money, quality and breeding considered.

We will show a large herd at the Western Stock Show and will welcome you whether you are a buyer or not.

There are three things about our cattle to which we invite your attention.

BREEDING

The ability of an animal to improve your herd depends upon its breeding. "Like produces like or the likeness of a near ancestor." Think of the names that are making Jersey history. You will find the following among the leaders.

GOLDEN FERN'S LAD—"The Old Plum Tree." The good ones all trace to him, the most prepotent sire ever imported. We have two grand-daughters, and grand-daughters of Golden Fern's Lad are scarce.

EMINENT—Sold for $10,000; the sire of 91 tested daughters, more than any other imported bull, living or dead. We have a grand-daughter and several others almost as close up.

FLYING FOX—Sold for $7,500; sire of 38 tested daughters and of more sons with tested daughters than any other bull, imported or home-bred. We have a grand-daughter, three great grand-daughters and a great grandson.

NOBLE OF OAKLANDS—Sold for $15,000; sire of 58 tested daughters and of many noted show and breeding bulls, including the $25,000 Golden Fern's Noble. We have three grand-daughters and two cows bred to one of his prize-winning sons.

ROYAL MAJESTY—Sire of a larger percentage of high testing cows than any other imported bull. We offer two great grandsons fit for service now. They are also great grandsons of Oxford Lad, the sire of Majesty and of Stockwell.

STOCKWELL—Sold for $11,500; the greatest show bull ever imported. We have a grand-daughter that is also a grand-daughter of Golden Fern's Lad on the sire's side.

We also have grand-daughters of Fairy Glens Raleigh, Oxford You'll Do, Hood Farm Pogis 9th, and four cows bred to a double grandson of Gamhoge Knight. There are no better bred Jerseys than these.

SIZE AND PRODUCTION

We do not favor little Jerseys. You will be surprised at the size of our heifers. The dam of our herd bull has milked 56 pounds of milk in a day and averaged 44 pounds daily for 104 days. He has two full sisters with well over 400 pounds R. of M. tests in a year with first calves. One of them on retest with second calf has produced 356 pounds of butter in less than six months. A half sister has produced over 800 pounds in a year and over 1,500 pounds in two years.

We have cows capable of making Register of Merit requirements with big margins. Several of them have milked over 40 pounds per day.

We offer for sale a grandson of Stockwell, whose dam has a Register of Merit official test of 604 pounds of butter in one year, and we think he is a show bull.

TYPE

These cattle were selected for type as well as for breeding and production. You are invited to inspect them at the Denver Stock Show in January. We have none reserved.

PRICES

Good cattle are never low in price. Poor cattle cannot be cheap. You can buy these cattle, one or a carload, at prices that will make you money. We are primarily in the silo business and we are greatly interested in improving the quality of the cattle in this intermountain territory.

For this purpose we offer a few well bred, solid color bull calves with registration papers at $40 each if taken before we have put a lot of feed into them.

We will be glad to show the cattle or give further information to anyone interested.

THE HINMAN SILO Co.

1650 Champa Street Denver, Colorado

ATTENTION

Western Farmers and Stockmen!

Never before have we been able to show you a more superior lot of Percheron Stallions and mares of serviceable age than now. Don't buy an unacclimated horse, ours are acclimated to your climate.

Don't buy a horse so far away from your home you cannot afford to take advantage of a replacement guarantee.

Our guarantee is not surpassed and seldom equalled. In fact, if you are looking for Registered Percherons, right in quality, right in pedigree, and of the rugged type, right in price, sold under a positive guarantee, see ours before you buy. We will be at the Western National as usual, January 20th to 27th.

The Jarosa Ranch

HOWARD M. JAY, Owner
Longmont, Colo.

Percheron Horses
Holstein Cattle

Write for description and prices today. Horse Sense will be enclosed free with our reply.

Farmers' Calls and Letters

Farmers in the Cope district of Eastern Colorado have formed their preliminary Farm Loan association. The first meetings were held in that section October 27th and 28th. These were for the purpose of explaining the details of the law. The matter was kept hot by farmers interested with the result of organization on December 9th, with the following directors: Arlo H. Robinson, Flagler; Pearl Lord, Arickaree; Everett L. Rountree, Cope; Shelby E. Teter, Cope; Geo. D. Young, Sr., Thurman; Frank H. Robinson, Cope. Officers were chosen as follows: Arlo H. Robinson, president; Pearl Lord, vice-president; F. H. Robinson, second vice president; Ray Marple, secretary-treasurer. The loan committee is composed of George D. Young, Sr., S. E. Teter and E. L. Rountree. This organization is ready for business. Its documents will be sent to the district bank as soon as that institution is opened and the farmers expect to have their loans in time for the crop season of the new year.

Hogs Grind Grain

The Hog Motor is both a grinder and feeder. With it your hogs will grind their own grain, saving you money and labor. This machine will care for 80 hogs on full feed at a saving of 25% of the grain, and a pig of 40 lbs. can operate the grinder. Grinds all kinds of grain, coarse or fine, separate or mixed. No waste—grain always dry, clean, fresh. We will keep the machine in repair one year Free, and refund money if not satisfied at the end of sixty days.

Send for Booklet

HOG MOTOR CO.

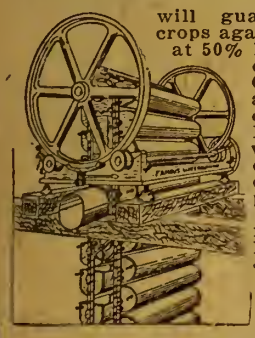
727 Andrus Bldg. Minneapolis

Hereford Bulls

Registered and High Grade, raised on open range — acclimated and ready for service, well boned and marked.

THE PLATTE RIVER CATTLE CO.
715 Ernest and Cranmer Bldg.
Telephone Main 3989 Denver, Colo.

The Famous Water Elevator



will guarantee your crops against droughts at 50% less cost than other systems. Our elevators are shipped on 30-day FREE TRIAL without a cent of your money in our pockets. Write today for our catalog—it is free

The System of No Regrets

THE FAMOUS WATER ELEVATOR CO.
1410 Stout Street, Denver, Colo.

WITTE HIGH-GRADE ENGINES

Kerosene, Gasoline, Gas, Distillate

2 to 22 H-P.

ED. H. WITTE

For operating belted machinery, elevators, pumps, feed grinders, bone mills, cream separators, crushers, blowers, hoists, etc.—Stationary or Portable, also Saw-Rigs, complete. Largest exclusive engine factory in the world selling direct to the user. Saves $25 to $100—**Immediate Shipment**—Write for latest WITTE prices and catalog of engines. State size wanted, or what work you have.—ED. H. WITTE, PRES.

Witte Engine Works,
2648 Oakland Avenue, Kansas City, Mo.
2648 Empire Building, Pittsburgh, Pa.

Moisture and Crop Production

(Continued from page 12)

centage he can tell in five minutes by using his soil auger just what moisture he has conserved for his crops, and can form an opinion as to whether it would be safe to plant a crop of wheat or barley, or whether he had better rely on sorghum and Sudan grass.

There is always more moisture to be found in land which has been deeply plowed than in any other. The water gets down into the subsoil and cannot get out, for with a foot or so of plowed dirt on top of it the evaporation is almost nil. Even in the fall of a dry year there is always moisture and the winter precipitation added to this nearly always provides a considerable depth of wet soil for spring planting.

Prof. D. W. Frear of the Colorado Agricultural College, found by experiment that figuring the average water capacity of our field soils at about 16 per cent, the amount they would carry to the foot would be about 2½ inches, so that the upper ten feet of our dry farming lands could hold about 25 inches or nearly two years' precipitation. It can be readily seen by these figures that there should be no difficulty in raising trees, orchard or any other deep-rooted crops, if the farmer is satisfied to wait until the moisture has been conserved in the subsoil.

Those who are just starting in on a dry-farm often inquire as to which are the best crops to plant. In order to answer this question intelligently it is necessary to understand not only the local conditions but also for what use the crops are intended.

Figures From Akron

The Government station at Akron has given us some interesting figures as to the amount of water required by different crops to produce one pound of grain or other dry plant matter, and in this connection it may be noted that it requires just as much water for a pound of leaves and stalk as it does for grain. Chemically there is very little difference between grain and the rest of the plant, but one is easily digested and assimilated by animals, while in the other the starchy compounds have been converted into woody fibre which is of little value for food.

According to these tables from Akron the millets head the list as using the least amount of water to the pound of dry matter.

Kursk Millet	265 lbs.
German Millet	293 "
Dwarf Kafir	285 "
White Kafir	297 "
Amber Cane	301 "
Black Kafir	302 "
Milo	324 "
Feterita	323 "
Sudan Grass	467 "
Turkey Red Wheat	473 "
Blue Stem Spring Wheat	559 "
Canadian Oats	559 "
Swedish Select	594 "
Potatoes	554 "
Northwestern Dent Corn	377 "
Bloody Butcher Corn	405 "
Iowa Silvermine Corn	407 "
Navy Bean	682 "
Mexican bean	773 "
Cowpea	571 "
Canada Pea	775 "

In looking over this list the thoughtful farmer might ask many questions which would be difficult to answer. For instance: Why should millet, which needs only 265 pounds of water to the pound of dry matter be more difficult to raise than Sudan grass, which demands 467?

We believe the answer to this is that the millet is shallow-rooted and not so well equipped to gather soil moisture. Between the corn and the sorghums there is a difference of about 100 pounds, but here again the handicap on the corn is offset to some extent by its superior and deeper root structure.

In comparing Turkey Red with Spring wheat everything is in favor of the former, 473 pounds against 559 and a length of root of 4 to 6 feet against one of usually less than 3 feet. The same figures almost might be used in demonstrating the superiority of Turkey Red to oats of any variety, and in this connection we find it claimed by many horse raisers that wheat hay is a better muscle-builder than oat hay.

Get Bigger Profit From Your Live Stock

Run-down stock is never profitable. Further, it is a source of danger, since it is liable to contract disease and cause serious loss. Your horses, cattle, sheep and swine cannot do their best unless they are healthy and vigorous, every organ working efficiently and doing full duty.
To make them strong, vigorous, healthy and profitable use

Pratts Animal Regulator

America's original Guaranteed Stock Tonic and Conditioner which has stood the test of nearly fifty years. It will quickly tone up and invigorate the whole system, insuring more and better market products, stronger young, and greater ability to work.

This preparation contains the tonics, laxatives and blood purifiers which your stock needs now to overcome the bad effects caused by winter confinement, dry feed, etc. It will expel troublesome worms, too, and quickly put your stock in the best of condition. Test it at our risk. Our Guarantee protects you.

Our dealer in your town has instructions to supply you with Pratts Preparations under our square-deal guarantee—*"Your money back if YOU are not satisfied"*—the guarantee that has stood for nearly 50 years.

566 *Write for Almanac—FREE.*

PRATT FOOD COMPANY
Philadelphia Chicago Toronto

Pratts

Big AUCTION SALE of Registered Herefords

We will sell at public auction at the
HOLLIS & PLATT SALES BARNS, DENVER UNION STOCK YARDS, ON
Wednesday, Jan. 24,'17, of Stock Show Week

50 Bulls 100 Herefords 50 Cows and Calves

The Bulls are an exceptionally fine lot, carrying the best blood lines of the breed and very choice individuals. Many of the cows have calves at foot and are rebred. The cattle offered in this sale are money makers, and it will pay you to see them if in the market.

We will also have a lot of choice bulls and heifers for sale during Stock Show week at private sale. Will sell a single animal or in carlots.

Reserve the sale date and see our cattle when you attend the show, or whenever you come to Denver. Write us if in the market for cattle.

THE WYATT LIVE STOCK COMPANY DENVER UNION STOCK YARDS

One Hundred-Fifty Percheron Stallions and Mares.

We have seventy-five as good young Percheron Stallions as can be found any place in the United States and we sell them at very reasonable prices. If you want a Stallion see what we have to offer. We have seventy-five good young mares and fillies for sale also.

250 Holstein Cows and Heifers

If you want HOLSTEIN COWS and HEIFERS springing and to freshen soon you can find them at our farms. We have some of the very best ones, from the best milking strains of these famous DAIRY cattle, and we sell them at reasonable prices. Write, wire or phone us.

Robison and Bishop Bros.,
Box "E" Towanda, Kans.

LOMA ALTA STOCK FARM

R. C. ROBERTSON, Prop.

Breeder of high-class Registered Jersey Cattle. Young bulls of serviceable age for sale. Breeding and individuality unexcelled. For pedigrees and prices address R. C. Robertson, Box 55, R. F. D. No. 1, Trinidad, Colorado.

BIG TYPE
Poland China

Choice lot of big, smooth boars and gilts from prize-winning stock. Write me or meet me at the Stock Show, January 20 to 27, 1917. A. D. McGillivray, Boulder, Colo.

PERCHERONS—BELGIANS—SHIRES

39 heavy 3 and 4-year registered Percheron stallions, 68 rugged 2-year-olds, 41 yearlings. Can spare 25 registered mares from my herd. 24 registered Belgian stallions. 11 registered Shire stallions. Sires and dams brought over from France, Belgium and England.

FRED CHANDLER, R 7, CHARITON, IOWA Direct from Denver

Profitable Farm Poultry

W. E. VAPLON

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries Poultry Department, Western Farm Life, Denver, Colorado.

In the next number of Western Farm Life will you please give the per cent of egg producing properties, also fat and fiber-forming properties of the common grains, such as corn, wheat, oats, barley and rye.

Will you also tell me if there is anything that can be done to prevent the hens from laying while on the roost, in the scratching pen or wherever they happen to be?. I have a loss of several eggs a day in this way. The hens are provided with plenty of suitable nests.—E. M., Littleton, Colo.

The accompanying table will answer the first question asked by E. M.

TABLE—PRINCIPAL POULTRY FEED-STUFFS

Stating the Dry Matter, Ash, Nutrients and Fuel Value in Ons Pound of Each. Also the Nutritive Ratio

	Dry Matter	Ash	Digestible Nutrients Protein	Carbo-hydrates	Fat	Feed Value	Nutritive Ratio
Wheat	.895	.018	.1023	.6921	.0168	1548	1:7.1
Middlings	.840	.038	.1270	.5315	.0340	1370	1:4.8
Wheat Bran	.885	.058	.1201	.4123	.0287	1111	1:4
Indian Corn	.891	.015	.0714	.6612	.0497	1572	1:10.8
Corn Meal	.850	.014	.0626	.6526	.0350	1478	1:11.7
Oats	.890	.030	.0925	.4834	.0418	1247	1:6.2
Oat Meal	.921	.020	.1153	.5206	.0593	1433	1:5.7
Barley	.891	.024	.0869	.6483	.0160	1435	1:7.9
Rye	.884	.019	.0912	.6973	.0136	1524	1:8
Sunflower Seed	.914	.026	.1630	.2140	.2120	1586	1:4.3
Millet	.865	.030	.1270	.5800	.0330	1454	1:5.1
Kafir Corn	.875	.013	.0578	.5358	.0133	1160	1:9.8
Green Grass	.347	.023	.0206	.2124	.0058	458	1:11
Green Alfalfa	.282	.027	.0389	.1120	.0041	298	1:3.1
Alfalfa Hay	.916	.074	.1058	.3733	.0138	949	1:3.9
Mangels	.091	.010	.0103	.0565	.0011	129	1:5.7
Potatoes	.211	.010	.0136	.1643		331	1:12
Cabbages	.095	.014	.0240	.0390	.0040	133	1:2
Lettuce	.041	.008	.0100	.0160	.0020	57	1:2.1
Onions	.124	.006	.0140	.0940	.0030	213	1:7.2
Apples	.159	.002	.0020	.1430	.0030	282	1:74.9
Beef Scraps	.987	.153	.4850		.1520	1544	1:0.7
Fresh Bone	.931	.245	.2230		.1650	1111	1:1.7
Eggs (less shells)	.345	.009	.1270		.0880	608	1:1.6
Skim Milk	.096	.007	.0310	.0461	.0090	181	1:2.1
Separator Milk	.094	.007	.0301	.0510	.0030	164	1:1.9
Buttermilk	.090	.007	.0282	.0470	.0050	161	1:2.1

In answer to the second question, "Will you tell me if there is anything that can be done to prevent the hens from laying while on the roost, in the scratching pen, and wherever they happen to be," will say that the only answer I can give is that we ourselves have been somewhat annoyed at times by this same trouble, but it has never been of long standing with us. We have never done anything to remedy it, taking it for granted that pullets just starting to lay have been responsible for the trouble.

Just finished reading an article in Western Farm Life saying I could have your valuable advice on poultry raising. First, I will tell you my circumstances. We have a 160-acre homestead near Rifle, Colorado. Worked the place this summer and only got in about two acres, as we had no team, but what we planted did fine, including corn, sudan grass, potatoes—17 sacks, cabbage, carrots, beets, onions, lettuce, beans, etc. Not only did it grow, but did fine. We are in Aspen now; my husband is working in the mines here for money to start us next spring on the homestead, and we intend staying there in the future, both winter and summer. I want a few chickens, but do not want such "dead ones" as my neighbors have. No one around me had any luck getting eggs. They have all colors of the rainbow, were never known to clean the hen-house, so they tell me I am foolish to bother with chickens. My idea is to start as cheap as I can but must have good, pure-bred fowls. Now, can I buy a dozen hens and a cock, or two dozen if I have the means, or can I get some of my neighbors' scrubs before they have time to get in debt to me? Am not very well acquainted with different kinds and their money-making quality as layers, but unless you suggest something better I am thinking of trying the Dark Cornish. On account of the coyotes being so plentiful, I will be compelled to keep them under fence. I want to increase the number to about a hundred as soon as possible. About how large a place should I put under fence and what kind of a winter scratching place (I mean covered) would be best? I want to try and get as good winter results as possible—that is, when I can get good prices for the eggs. My work I do not mind but cannot invest very much money, as the wire to fence the lot will cost several dollars. I think you understand and will thank you very much for any advice I may receive in the future.—Mrs. H. D., Aspen, Colo.

I think you will find, on investigation, that not only the scrubs but practically all the choice flocks in the country have been on a strike for the past month. The secret of getting eggs at this season of the year is not so much breed as it is early maturity of the pullets, plus good feed and care.

You will find a good many people in the poultry business who are running a mixed flock making good profits, and others with the very choicest of pure-bred stock going behind. We believe a flock uniform in appearance is desirable, and that the hen bred for a purpose is the one that will make the most money, but too many breeders select for appearance only, and not for performance. The dairyman values a cow because of the butter fat she produces; whether she is a little off color or not means nothing to him, while the best looker, if she does not produce the milk, goes to the butcher. The scientific dairyman has not only a producing herd, but a herd pleasing to the eye. When the poultrymen use the same methods in selecting their stock they will have higher producers and flocks just as pleasing to the eye as they have at present. Individual hens may not score as high according to the present standard of perfection, but that is the fault of the standard.

It is altogether possible for you to buy the number of hens you want for next season's work. You might accidentally secure good laying stock in this way, but the thing you will have to do will be to breed up your flock by your own selection. By making your wants known to the commission houses in Denver, telling them the breed or variety you wish to handle, or by getting in touch with some of the poultry associations in the smaller cities of the state, I believe you will have no trouble in getting what you want. Write to the secretary of the Poultry Association at Boulder, Greeley, Fort Morgan, Pueblo, Trinidad or Canon City, the name of the secretary is not essential.

In selecting a variety, do not consider personal likes or dislikes so much as the demand of the market. You will find it most difficult, if not impossible, to get any large number of the Cornish fowls. Experience has taught us in Colorado that the best dual purpose fowls are those of the type of the

Continued on Page 19

EARLY HATCHED CHICKS PAY BEST

Get your incubator in January, take off an early hatch. Then your poultry sells in early spring and gets highest prices of the year. Buy early, you also get more hatches. Superior insulation and large, strong, pure copper, hot water heater make this incubator the cold weather hatcher. One extra hatch days for incubator. Learn all about our generous offer.

FIXTURES FREE

FREIGHT PAID

SURE HATCH

OUR BIG CATALOG FREE

which pictures and describes fully the Sure Hatch Incubators and Brooders. Brim full of valuable and truthful information on Chicken Raising and Poultry Profits. Free! Uncle Sam Poultry and Text Book, Fixtures, Instruction Book and Freight paid anywhere when you order. Send a postal today for this Sure Hatch Catalog. Send no money or stamps.

SURE HATCH, Box 51, Fremont, Neb.

Did You Have "Good Luck"

With Your Chicks?

"Luck" with chicks starts with the incubator. If it is properly heated, properly regulated, and properly ventilated, your chicks will start off with vitality. They won't come out of the shell half dead. So many people trust their eggs to a cheap machine, forgetting that it is not only how many you hatch that counts, but how many live and grow.

Start Your Chicks With a Queen Constitution

The Queen has a reputation for hatching strong, healthy chicks. It is built of genuine Redwood—very scarce in these days of cheap substitutes. Redwood does not absorb odors from the hatching eggs. Cheaper woods, and pasteboard lining in iron and tin machines, retain the odors to weaken and kill the hatching chicks.

Queen incubators are not cheap, but they are built to hatch big hatches of chicks that live. Book sent free.

Queen Incubator Co., 1179 N. 14th St., Lincoln, Nebr.

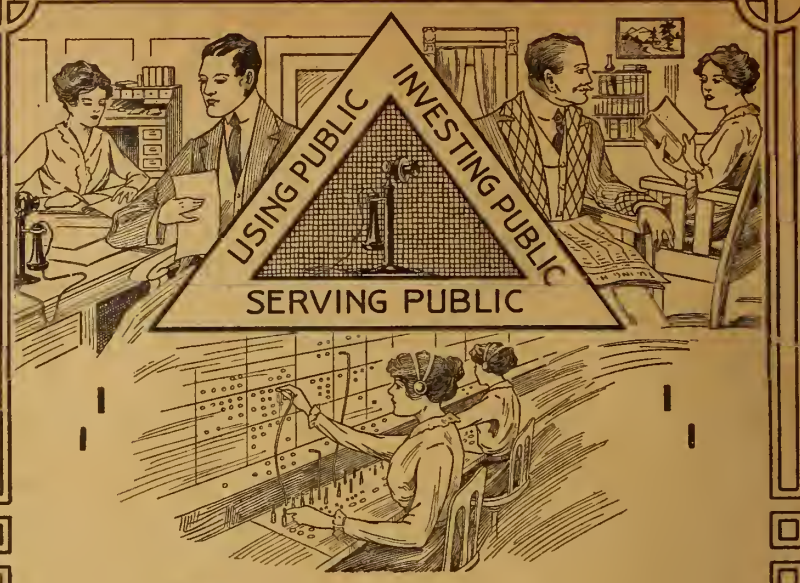
TORRID TANK HEATER

Ons of our torrid tank heaters will pay for itself many times over this winter. Just as illustrated. Will ship immediately. Order today at our low direct to you price. Get our big FREE Catalog and 48-page Grocery List. Address

Complete $9.98

GENERAL MERCANTILE CO., "The Great Mail Order House" 727 South 9th St., OMAHA, NEB.

Poultry Book Latest and best yet; 144 pages, 215 beautiful pictures, hatching, rearing, feeding and disease information. Describes busy Poultry Farm handling 58 pure-bred varieties. Tells how to choose fowls, eggs, incubators, sprouters. This book worth dollars mailed for 10 cents. Berry's Poultry Farm, Box 66, Clarinda, Iowa



Mutual Interest

From a telephone standpoint the public is made up of three grand divisions, all equally interested in the growth, development and general success of our enterprise.

The telephone INVESTING public, our stockholders, who furnish money with which to build plant. They are interested because they seek assurance that their investment is safe and that a fair return will be forthcoming.

The telephone SERVING public, our employes, who operate the plant. They are interested because their lives are centered in their chosen vocation, and their material welfare depends upon a remuneration commensurate with the unceasing energy and sincere purpose which they are devoting to this public service.

The telephone USING public, our patrons, whom we serve. They are interested because the efficiency and adequacy of their service depends upon our ability to build plant in pace with the development of the several states, to maintain our plant at a high standard of efficiency and to pay salaries and wages sufficient to attract the most competent employes.

Here is a mutuality of interest involving obligations which must be mutually shared by the entire public.

The Mountain States Telephone & Telegraph Company

See Our GROWTH!

The Farmers Life Insurance Co.

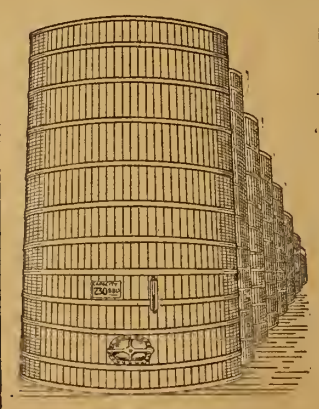
Denver, Colorado

	1913	1914	1915
ADMITTED ASSETS	$255,960.29	$649,128.22	$376,270.02
LIABILITIES			
Policy Reserves and Other Liabilities	$ 5,848.97	$124,695.31	$288,930.26
Capital Stock	117,648.00	219,900.00	254,756.00
Surplus	132,463.32	304,532.91	332,583.77
Total Liabilities	$255,960.29	$649,128.22	$876,270.02

Next annual statement will show assets of more than $2,500,000, with $17,000,000 insurance in force

EXECUTIVE OFFICERS

Hon. E. M. Ammons....President
L. C. Fulenwider....First Vice-President
John H. Orr....Second Vice-President
W. M. Glenn....Third Vice-President
D. A. Lord....Fourth Vice-President
Chas. H. Tully....Fifth Vice-President
E. M. Sabin....Secretary and Counsel
Calvin Fleming....Treasurer
J. A. O'Shaughnessy....General Manager
Dr. J. E. Kinney....Medical Director



White Cedar Silos

Special Sale

Attention, FARMERS and RANCHMEN

We have decided to close out our surplus COOPERAGE and offer for sale

30 WHITE CEDAR TANKS especially adapted for SILOS.

These TANKS are 16 feet high and have a diameter of 9 feet at the top and 10 feet at the bottom, and a capacity of 230 barrels. They are built of White Cedar, 2-inch staves, have 12 hoops and a 14-inch manhole (see cut). These Tanks are in good condition and will last many years.

We will knock down and properly mark for re-erection and place on wagons or cars for

$50 each, cash, f.o.b. Denver

THE PH. ZANG BREWING CO. DENVER

Farmers' and Stockmen's Exchange

Advertisements will be inserted in this department for 4c per word for each insertion. Remittances can be made by postoffice money order or personal check. Advertisements are set in uniform style, no display type or illustrations admitted under any circumstances. Every numeral and initial counts as one word. Guaranteed circulation over 50,000 copies each issue. WESTERN FARM LIFE is issued semi-monthly, the first and fifteenth of each month. Advertising copy for this department must reach us ten days before date of issue The rate is very low for the large circulation offered. WESTERN FARM LIFE is the greatest classified farm paper advertising medium in Colorado and the West. It carries the most classified advertising because it gives you best results. Our Farmers' and Stockmen's Exchange Columns offer you a splendid opportunity for selling poultry, live stock, lands, seeds and nursery goods or for locating something you wish to buy. Write for proof showing how these columns pay advertisers Every subscriber reads these columns closely. Send us in a trial advertisement.

POULTRY

Advertisements under this head will be inserted at 4c a word, four or more insertions 3½c a word each insertion. No display type or illustrations admitted

ORPINGTONS, WHITE OR BUFF. LIST FREE. Frank Lewis, Superior, Neb.

QUALITY DARK CORNISH, THE IDEAL FARM fowl. W. W. Officer, Fowler, Colo.

PEARL GUINEAS, $1.00 EACH. WHITE Guineas, $1.25. John Hass, Bettendorf, Iowa.

WHITE WYANDOTTE COCKERELS, REASONable if taken soon. Mrs. Geo. Wheeler, Route A, Otis, Colo.

BLACK, WHITE AND BUFF MINORCAS. Premium stock cheap. C. H. Bartholomew, Wichita, Kansas.

SINGLE COMB BUFF LEGHORNS, COCKERels. Good ones, $1.00 to $5.00. V. P. Johnson, Saronville, Neb.

BARRED PLYMOUTH ROCKS—CHOICE COCKerels and pullets, either mating. Chester Blunt, Greeley, Colo.

WHITE ROCKS—PULLETS, ONE DOLLAR; hens and cockerels, one-fifty each. Lone Tree Ranch, Carr, Weld Co., Colo.

BARRED PLYMOUTH ROCK COCKERELS, farm raised, $1.50 to $2.00. Mrs. Frank Davis, Holbrook, Neb.

MATCHLESS MOTTLED ANCOMAS. EGGS $1.50 and up. Book settings now. Mrs. D. S. Davis, 140 Jackson St., Denver, Colo.

MAMMOTH BRONZE TURKEYS AND WHITE Wyandottes. Choice young stock for sale. Miss Anna Lansdown, Fort Lupton, Colo. Box 291.

BOOK YOUR ORDERS NOW FOR BRONZE Turkey Eggs, 20c apiece. Pure bred, two-year-old stock. Mrs. C. J. Davidson, Fort Lupton, Colo.

LIGHT BRAHMAS—FROM PRIZE STOCK; greatest winter layers. Cockerels, pullets and hens for sale. E. Grosser, 2240 Perry St., Denver.

BARRED OR WHITE ROCKS, WHITE WYANdottes, layers, winners. Choice cockerels, $3.00 and $5.00. Satisfaction or money back. 1733 Ranch. Box 129. Kearney, Neb.

BARRED PLYMOUTH ROCK COCKERELS. Heavy egg-laying strain. Large boned, fine barred, yellow-legged. Price $1.50 to $2.00 each and up. Mrs. Raymond Voss, Hubbard, Neb.

SILVER LACED WYANDOTTES, PRIZE WINners; vigorous farm raised birds. Choice cockerels $1.50 to $2. Well laced yearling hens, $1.50; pullets, $2. Minnie Patterson, St. Charles, Minn.

FREE—HOW TO MATE AND BREED RHODE Island Reds. Just what you want to know but could not get correct information. Send stamp. Trapnested stock, both combs, big dark velvety red strain for sale. Ava Poultry Yards, Ava, Mo.

S. C. W. LEGHORN BREEDING COCKERELS. 200 of them for sale at a price you can afford to buy. Special low price on quantity lot of dozen or more. Tom Barron and American strain. Write today. Bellevue Poultry Farm, Scammon, Kan.

EXHIBITION AND HEAVY LAYING TYPE Single Comb Reds. We are the oldest breeders of reliable Reds in the West. Eggs now ready for hatching, $6.00 per 100. Send for circular. Lower's Poultry Farm, Arvada, Colo.

100 ROSE COMB RED COCKS AND COCKERels, sired by roosters costing $15 to $35, $2, $3.50, $5, $7.50 each. A few higher. Order at once; they will go fast; 1917 pens best ever. Baby chicks. W. R. Huston, Red Specialist, Americus, Kan.

MEN—WOMEN—WANTED EVERYWHERE.—U. S. Government jobs, $75.00 to $100.00 month. Vacations. Common education sufficient. Write immediately for free list of positions now obtainable. Franklin Institute, T 179, Rochester, N. Y.

HALL'S RHODE ISLAND REDS—WIN AT Wyoming State Fair in bot competition. A limited number of cockerels of exhibition quality for sale. Also a few White Plymouth Rock cockerels—tbe real wbite kind. All atock shipped on approval. Write me your wants. Liston L. Hall, Gering Neb

COCKERELS, $2. PULLETS, $1.50 EACH. Can make up some good pens at very reasonable prices. All the leading breeds. Now is the time to order eggs for early spring delivery, $1.50 per setting; $6.00 bundred. Booking orders now for baby chicks. J. L. Keating, Box 357, Kansas City, Mo.

S. C. W. LEGHORNS, HATCHING EGGS FERtility guaranteed; day old chix, born with a "hustle" in them. From trap nest recorded and Hoganized parents. Order now for March to July deliveries. Satisfaction guaranteed. Established 1908. Rosawill Poultry Farm, R. No. 4, Box 60, Denver, Colo.

PET STOCK

Advertisements under this head will be inserted at 4c a word, four or more insertions 3½c a word each insertion. No display type or illustrations admitted

COLLIES, AIREDALE TERRIERS. SEND FOR list. W. R. Watson, Box 526, Oakland, Ia.

BELGIAN RABBITS FOR SALE—GOOD SIZE. Priced reasonable. A. M. Donnell, Wheatridge, Colo.

YOU CAN MAKE A GOOD LIVING IN YOUR back yard raising Belgian hares. Particulars and price list of all breeds, 10 cents. Thorson's Rabbitry, Aurora, Colo.

LIVE STOCK

Advertisements under this headwill be inserted at 4c a word, four or more insertions 3½c a word each insertion. No display type or illustrations admitted

CATTLE

FOR SALE—PEDIGREED, YOUNG SHORThorn bulls and heifers, by owner, Geo. Lasser, Golden, Colo. Phone Arvada 101 J 5.

HIGH CLASS JERSEYS—COUNT MAJESTY AT head of herd. His dam, Mandana's Lady Imp., last year gave 14,014 lbs. milk, 784 lbs. 1 oz. butter. His calves are showing up fine. Have one December bull calf by him for aale. He is good. Could spare one or two cows. Also Duroc hogs at best breeding. A. M. McClenahan, Greeley, Colo.

HOGS

REGISTERED BIG TYPE DUROC JERSEY HOGS for sale. Edgemoor Farm, Littleton, Colo Baldwell Martin, Owner.

FOR SALE—MY ENTIRE HERD OF DUROC Jerseys, consisting of 30 brood sows and 120 shoats, all of Top Notcher, Buddy K and Ohio Chief stock. W. H. Wheeler, Garden City, Kans.

REGISTERED DUROC JERSEY BOARS AND gilts. Sell at $15 up, according to age and quality. Registered gilts bred to our boars at $30 up. Our hogs top the market every time in Denver, and we hold the record on that market at $11.10 for 6-months-old barrows averaging 206½ lbs. J O. D Ranch. Arova, Colo.

FOR SALE OR EXCHANGE FOR CATTLE, 5-year-old bay stallion; 1,300; good disposition. Sired by Steel King (son of Gambetta Wilkes and daughter of Onward), dam by Norval Chief, second dam by grandson of Geo. Wilkes, third dam by Onward, son of over 200 in list. For full pedigree and description, write J. P. Wagner, Wetmore, Colo.

FARMS AND RANCHES

Advertisements under this headwill be inserted at 4c a word, four or more insertions 3½c a word each insertion. No display type or illustrations admitted

FARMS FOR SALE

RANCH FOR SALE—140 A., GOOD IMPROVEments, 2 miles west of Gunnison on the Gunnison river. Fine dairy and fishing resort. Address Box 34, Gunnison, Colo.

UTAH LANDS—FREE HOMESTEADS, 320 acres Utah; ideal climate. Assured home markets. Dry and irrigated farms. Free circular. Utah Homesteaders' Guide, box 24, Salt Lake City, Utah.

TO FARMERS—WHY PAY RENT? One-half of crop annually will pay for fine irrigated land close to our town. Those bsving necessary tools and horses to farm with, this is a fine opportunity to get a good farm. Write today. Merino State Bank, Merino, Colo.

LAND—I HAVE PLACED OVER 400 FAMILIES in Weld County, mostly on homesteads and relinquisbments. I know notbing desirable left open to entry, but can still furnish partly improvsd relinquishments or deeded lands at very low price. Call for list. Every statement guaranteed. Land sbown by auto from Denver. Mackley, 1648 Champa, Denver, Colo.

WANTED—TO HEAR FROM OWNER OF FARM or unimproved land for sale. O. K. HAWLEY, Baldwin, Wis.

WANTED—TO HEAR FROM OWNER OF GOOD ranch for sale. State cash price and description. D. F. Bush, Minneapolis, Minn.

LUMBER

Advertisements under this head will be inserted at 4c a word, four or more insertions 3½c a word each insertion. No display type or illustrations admitted

LUMBER CHEAP DIRECT TO YOU. PACIFIC Coast Sawmill Co., Portland, Ore.

LUMBER—POSTS AT LOWEST PRICES, GET our delivered prices. Send lumber list for estimate. Pay after unloading. Kirk Company, Tacoma, Wash.

HELP WANTED

Advertisements under this head will be inserted at 4c a word, four or more insertions 3½c a word each insertion. No display type or illustrations admitted

WANTED—LIVE AGENTS AT ONCE. EXCELlent terms. Falls City Nursery, Falls City, Neb.

MAN TO WEAR FINE SUIT, ACT AS AGENT. Big pay, easy work. Banner Tailoring Co., Dept. 502, Chicago.

WISH TO HEAR AT ONCE FROM RELIABLE single man capable of managing large ranch successfully. W-W Ranch 328, Farmingdale, S. Dak.

WANTED—AGENTS TO SELL FARMER'S ACcount Book. Quick seller. Big profits. Exclusive territory. L. L. Sypbers, Fort Wayne, Ind.

WE WANT A RELIABLE MAN OR WOMAN TO handle subscriptions in each community. Liberal terms. Write us today. Western Farm Life, Denver, Colo.

MISCELLANEOUS

Advertisements under this head will be inserted at 4c a word, four or more insertions 3½c a word each insertion. No display type or illustrations admitted

WANTED—OATS, BALD AND FEED BARLEY, seed corn, fall and spring rye, beans, millet, speltz and Sudan grass. If any to offer mail samples and prices. Burton Seed Co., Denver.

KODAKS, CAMERAS, PHOTO SUPPLIES—Ford's, the best kodak store, 1029 16tb St Opp. Old P. O., Denver, Colo., for Eastman Kodaks, all makes cameras, films, photo supplies; develop any size roll film, 10c; print pictures, 3c each and up; mail orders solicited; kodak and camera catalogs mailed free upon request. Mention this paper.

AUTO AND TRACTOR SCHOOL

BECOME AUTO AND TRACTOR EXPERTS. Practical work; no books; tools furnished; no special education required; free tractor, farm lighting and electric starter courses to all who enroll for auto course; free catalog. Lincoln Auto School, 3117 "O" St., Lincoln, Neb.

PATENT ATTORNEYS

IDEAS WANTED — MANUFACTURERS ARE writing for patents procured tbru me. Three books, with list bundreds of inventions wanted sent free. I belp you market your invention. Advice free. R. B. Owen, 162 Owen Bldg., Washington, D. C.

BEE SUPPLIES AND HONEY

DELICIOUS ALFALFA HONEY FROM PROducer. Two 60-lb. cans, $11.75. Satisfaction guaranteed. Wesley Foster, Boulder, Colo.

BEE SUPPLIES OF BEST QUALITY. SEND for 68-page illustrated catalog. We also sell comb and extracted honey. The Colorado Honey Producers' Association, Denver, Colo.

Profitable Farm Poultry

Continued from Page 18

American class, medium in size, quick maturing, and active.

As regards your poultry house and scratching shed, the roosting pen may be made to answer for a scratching place if it is made light and if a platform is built under the roosts and if the floor is well covered with litter. Of course free range is best for the fowls, but if they are kept busy in an inclosure, whether an inclosure is large or small, you will find they will be contented.

You speak of getting winter eggs. Bear in mind again that the secret of winter egg production is seasonable hatching. It is the pullet that lays the winter eggs and she must be well matured and developed before winter weather and then well cared for if you are to get winter eggs.

Ship Your **FURS and HIDES** To Us

Prices and Tags Free on Request
No Commission, No Delay

Square Deal, Honest Grading, Prompt Returns
That's Our Motto

CHICAGO HIDE, FUR & WOOL HOUSE
The Largest House of its kind in the West DOUGLAS, WYOMING, U. S. A.

Ruedy Fertilizer and Poultry Food Manufacturing Co.
STOCK YARDS STATION, DENVER, COLO.
16 more different Foods for Poultry, such as Granite Grit, Charcoal and Oyster Shell. Remember the Soil—Replace the losses by using our Blood of Bone Fertilizer.
SELECT TANKAGE FOR HOGS **HIGH PROTEIN MEAT SCRAPS**
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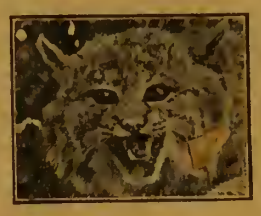

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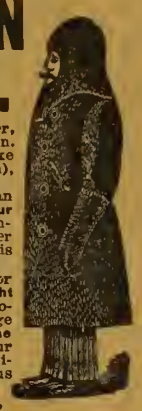

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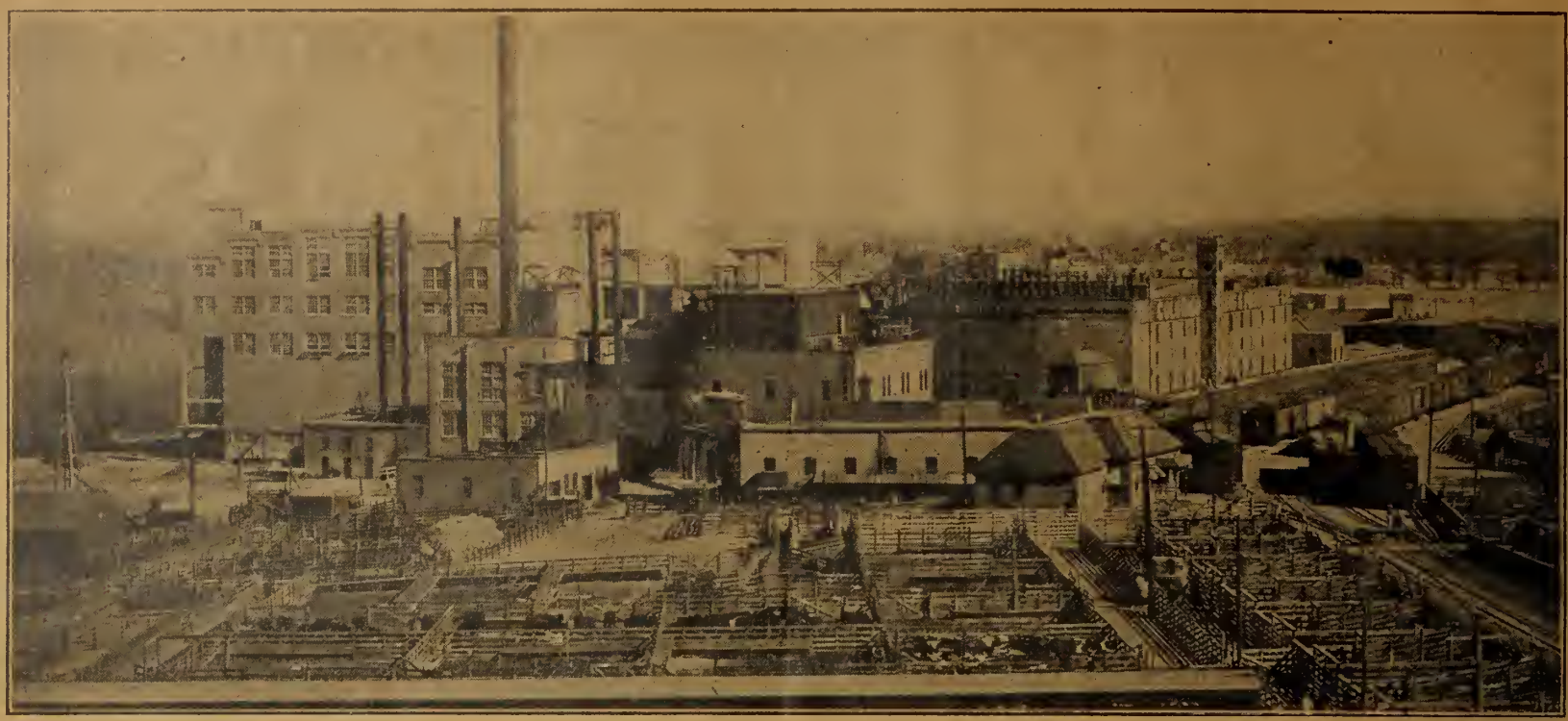

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$200,000 spent in betterments in 1916.

$500,000 will be spent in improvements for 1917.

HOW WE GROW

Comparison of Live Stock Receipts at Denver for 1916 and 1915:

	1916		1915	
	No.	Value	No.	Value
Cattle	601,200	$30,166,000	424,341	$19,095,000
Swine	463,169	7,321,000	343,653	5,154,000
Sheep	1,392,687	9,356,000	765,170	4,825,000
Horses	52,683	6,585,000	71,870	7,195,000
Total	2,509,739	$53,428,000	1,605,034	$36,269,000

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WESTERN Farm Life

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ALL SNUG FOR THE WINTER

Roughage is the winter's bread for the livestock. Let the blizzards blow and the snow fly, as long as there is plenty of cane hay, kafir forage, corn and straw the cattle will not suffer. This is the feed yard of the Arriba Trading Company's farm on the Eastern Colorado plains. Fifteen years ago a scene like this could not have been photographed. Then it was up to the cattle to rough thru on grass and when the snows were too deep stock suffered or perished. On this farm there are tons and tons of rough feed, a pit silo and a good supply of dry grain for wintering beef and dairy cows and a bunch of hogs.

DENVER, COLORADO, JANUARY 15, 1917

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WESTERN FARM LIFE

A Western Magazine for Western Farmers and Stockmen

Comprising Ranch and Range, Farmers Life and Fruit Journal, Trans-Mo. Farmer and Ranchman

Largest Circulation of Any Farm Magazine in the West

Volume XIX | DENVER, COLORADO, JANUARY 15, 1917 | Number 2

Pinto Beans; the New Cash Crop of the Plains

HOW CROP IS HANDLED IN COLORADO, NEW MEXICO AND WYOMING

ALVIN T. STEINEL

BEANS are now ranked as one of the staple food products produced for the general market in Colorado, New Mexico and portions of Wyoming. The sudden rise of this crop in the dry farming sections has been due to two causes, first war demand in 1915, and second, to the 1916 bean shortage in New York and Michigan, the two chief bean growing states of the east. The irrigated sections also have taken up the crop and in the Greeley district it has been grown by many for seed purposes, under contract with eastern and western jobbers.

The principal variety grown in the territory of Western Farm Life is the pinto. This market term covers various mixed kinds generally designated as Mexican, or frijoles, which have been grown in the southwest for many years. Whether these beans were originally introduced by Spanish settlers in what is now New Mexico, or further south in the Mexican republic, or whether they were developed from a plant native to the arid regions of Central or South America is a matter of conjecture, but beans have been a staple article of diet in the northern states of the Mexican republic and the bordering states of the union, as far back as the history of white settlement goes.

Pinto the Market Term

Pinto is the market term for these beans and growers are urged to stick to this designation, as any other name for the same general product is apt to affect the price. These beans differ from the navy bean in color and size, being somewhat larger and usually of a mottled reddish brown, pale pink or cream color. They have been discriminated against in the market because of their color, but since the consumer has become acquainted with their quality, he is willing to pay the same price that he pays for white beans, to which they are superior in flavor and fully equal in food value.

At the time this is being written there was but a slight difference in the retail price at Denver, pintos being sold at three pounds for twenty-five cents and navies at 10 cents a pound straight.

Growers are eager for more definite information on the subject, as the available government publications do not deal specifically with pinto beans. The Colorado Experiment station is preparing a bulletin which should be ready for distribution by March 1st, and Western Farm Life will give due notice of its appearance. While the general principles of bean growing may be the same in all districts, there is such a wide variation in conditions of soil, moisture and methods of farming in the states where this crop has gained such sudden market importance, that specific information is needed on all phases of its culture. The crop is considered the chief cash income in some dry farming localities where yields of 500 to 800 pounds an acre are considered good, and it is produced extensively under irrigation where the grower looks for a return of 1,200 to 2,000 pounds per acre.

However, it is as a dry land crop that pintos are destined to be most important in the farm economy of the mountain states, for the reason that the irrigation farmer is apt to drop the crop as soon as the attractive war prices cease to prevail. The dry land farmer can grow them with good profit even if he receives no more than 3½ cents a pound. He grew them to some extent at 2½ cents. In the past season he got as high as 7 cents, prices beginning at 4 and rapidly advancing to the first named figure, with the average of the beans sold after November 1st right around 6 cents. At this rate even the fields that, because of 60-day drouth produced only 300 pounds to the acre, amply repaid the grower.

Pinto beans on farm of Ed Wagner, near Yoder, Colo., showing wide spacing of rows for thoro cultivation under dry farming methods.

The value of the crop lies not only in the ready demand for a food product, but in the fact that beans are a leguminous plant, gathering nitrogen from the air and storing it in the soil, thus improving the land for crops that follow; and further in the fact that the vines have high feeding value, and can be utilized to great advantage in feeding with silage on the dry land farm, where milk production is the chief business.

Methods of handling the crop are given in brief form by county agriculturists in portions of Colorado and New Mexico and from a grower's standpoint and experience in Northern Wyoming:

SOUTHERN COLORADO

Charles E. Smith, Agriculturist, Las Animas county, Colo.—Pinto beans were planted all the way from May 21 to July 1. Two or three cultivations are given. There was some insect damage by the lady bird beetle. Yields on dry land went from nothing to 500 pounds; on irrigated land, 1,200 to 2,900 pounds. Estimated shipments from Trinidad, Hoehne and Poso, about 35 cars. Many dry land beans were planted on sod and did not come up until the August rains, consequently did not mature.

Stanley V. Smith, Agriculturist, Pueblo County.—Planting was from May 15 to June 15; about 30 pounds on irrigated and 15 to 20 pounds per acre on dry land. From two to five cultivations are given. Pinto and Mexican are used synonymously; as far as I have observed, only one variety is grown. There was some insect trouble from bean beetle and some fields were badly damaged by rust. On dry land the yields were 300 or 400 pounds per acre on the average, but some as high as 600 or 700 pounds, while under irrigation the yields were from 1,000 to 2,000 pounds per acre. The acreage in this county was estimated at around 2,000 on dry land and 1,000 to 1,500 acres under irrigation. Advice given growers was to select seed from heavy yielding plants in the field, free from disease, and to discard after shelling any beans that are off type.

CENTRAL COLORADO

George R. Smith, Agriculturist, Adams County, Colo.—Planting in this county was from May 20 to June 5. A two-row bean planter is used, planting same distance as corn and seeding at rate of about 12 pounds per acre on dry land. Little insect damage experienced. Average yield on sod was about 250 pounds per acre; on old ground about 600 pounds, this without irrigation. Principal shipping stations Brighton, Bennett, Strasburg, Watkins and Deertrail. Growers were advised to stick to one variety. The crop has been one of the best paying grown on dry land.

NORTHEAST COLORADO

George C. Burckhalter, Agriculturist, Logan County, Colo.—Planting here was about June 1st; seeding at rate of 20 to 25 pounds per acre. Beans cultivated at least three times on old land. Yields under dry farming about 10 to 12 bushels per acre; under irrigation about 20 bushels.

NEW MEXICO

H. C. Stewart, Agriculturist, Bernalillo County, N. M.—Planting was April 1 to June 1 and rate of seeding 16 to 30 pounds per acre. About three cultivations given. The variety is known as the New Mexico Pinto. Insect damage was by the spotted lady bug beetle and the yellow bean bug. On dry lands the yields were about 500 pounds and on irrigated lands about 1,000 pounds per acre. Growers are advised to field select their plants for resistance to drouth and heavy yielding qualities. About 4,000 acres grown under dry farming, but light acreage in irrigated section, because the bean bug has been doing much damage during the past three years. Some spraying was done this season.

Orren Beatty, Agriculturist, Union County, N. M.—Planting in this county takes place May 1 to July 1. Beans are planted with a two-row corn planter and lister, at the rate of 8 to 12 pounds per acre; about three cultivations are given. The Mexican Pinto is the principal variety grown. Stem and root maggot and pod weevil have done considerable damage. The average yield under dry farming was 300 pounds per acre, and where good farming is done the yields went as high as 800 pounds. Growers are advised to select and grade their seed.

V. L. Martineau, Colfax County, N. M.—Planting in this county takes place June 1st to 20th. Rate of seeding on dry lands, about 15 pounds per acre and 20 pounds on irrigated land. The varieties are mixed and we are trying to develop the Mexican Pinto. There is some damage by the lady bird beetle. Yields under dry farming went from 300 to 1,000 pounds per acre and under irrigation from 500 to 2,000 pounds, but rarely over 1,500 pounds. Our acreage was about 3,000 on dry and 2,000 acres under irrigation. Growers were advised to hand pick a bushel for a seed plat, selecting seed well filled, of uniform type and color.

Prof. Alvin Kezer of Colorado Agricultural college advises rows three and a half feet apart and 8 to 15 pounds of seed per acre for dry land planting; for irrigation, rows 28 to 30 inches apart and 20 to 25 pounds of seed.

WYOMING

M. D. Harris, a member of the board of county commissioners of Big Horn county, Wyo., who has a farm near Lovell, produced over 17,000

Continued on Page 20

Pinto bean harvest on farm of A. L. Stoops near Tunville, Colo. Mr. Stoops driving bean cutter and hands forking beans into shooks. The fifty-acre field was rented ground on which Mr. Stoops, who owns an irrigated farm nearby, grew pinto beans without irrigation, getting a yield of 1,000 pounds per acre. He sold the crop under contract to a seed house.

Four Pit Silos Insure Winter Income from Cream

PRACTICAL WORK BEING DONE ON A PLAINS EXPERIMENTAL FARM

ALVIN T. STEINEL

ON THE dry land farm there is, after all, just one problem, and it is the same as the problem of the farm in a humid country, namely: What plan of farming must be followed to bring a satisfactory return on the investment, provide a living for the farm family and at least keep up if not increase the fertility of the soil? There is only one true answer everywhere, under every condition of general farming and that is—livestock.

The farmer in a country of ample rainfall finds it less urgent, tho always as wise, to make stock farming or dairying his chief business, rather than the sale of grain or other food or fiber products. But the farmer in a region where the average rainfall is scant and varying, where one season he may have almost humid and the next practically arid conditions, must of necessity place his main reliance upon livestock of some or all sorts if he expects permanent success.

Prevention of runoff, full use by plants of all available moisture and increase in water holding capacity of the soil as well as increase in fertility by the use of manures are the essentials on the dry-land farm. These are to be achieved only thru a cropping system that includes drouth-resistant plants and stock to consume the bulk of them, the finished product of such a farm being stock on the hoof and milk or cream.

Having set down these principles, we now come to a place where they are being carried out under easily observable conditions as an object lesson that is worth careful study.

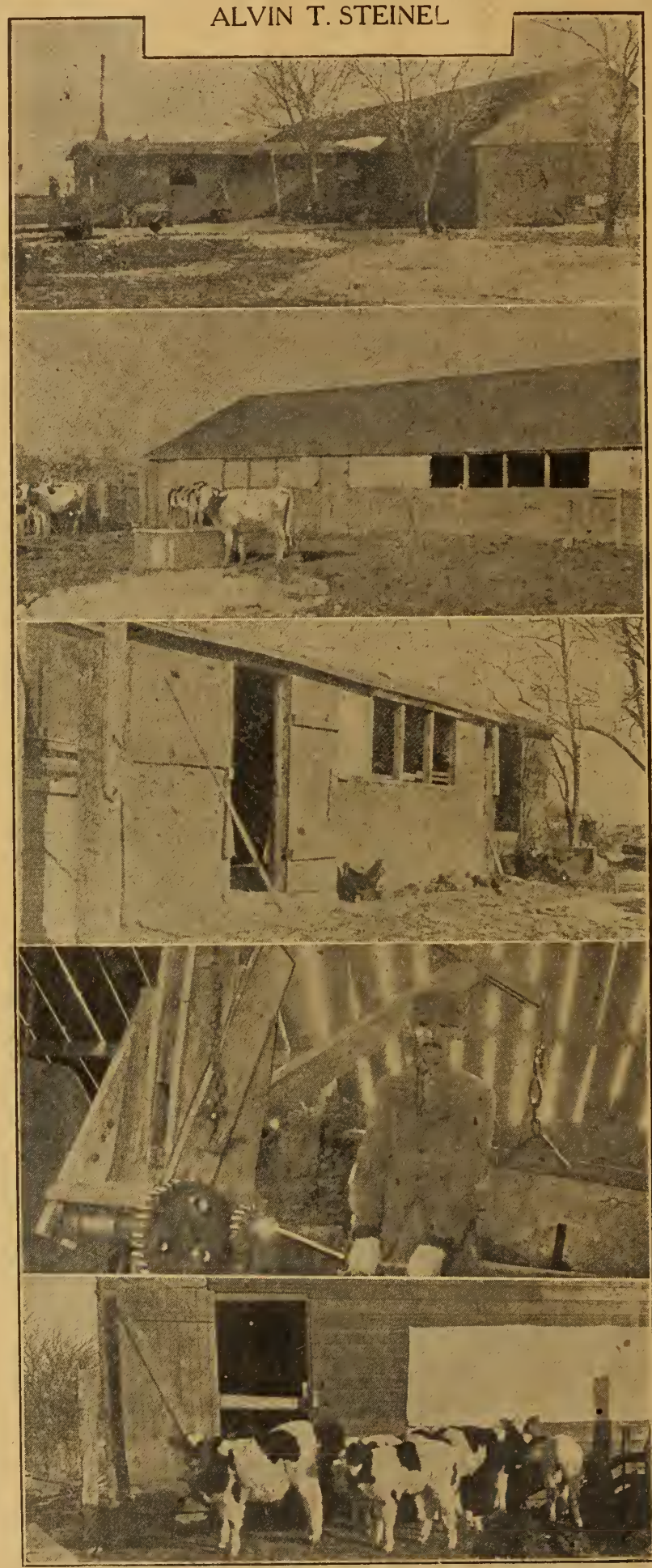
At Cheyenne Wells, Colo., near the Kansas border, altitude 4,300 feet, average annual rainfall, based on a twenty-year record, 16½ inches, is located the Plains sub-station of the Colorado State Experiment Station. J. W. Adams is superintendent. The farm comprises 160 acres, owned by the state and donated by the Union Pacific railroad with the proviso that the land must always be used for the pupose of an experimental farm. However, the state contributes nothing to the support of the station except farm buildings and the superintendent receives no salary, but must get his remuneration from the profitable working of the farm. He has the place rent free and he furnishes livestock, implements and labor in return for use of the land and buildings.

Half Under Cultivation.

One-half the farm is under cultivation and upon this eighty acres is produced the feed for a herd of grade Holsteins numbering about twenty milk cows and other stock to the total of forty head. The stock has the run of considerable free range on unfenced lands adjoining, for summer pasture, but this range is not depended on for keeping up milk flow.

Cream sales on the farm during December just past amounted to over $100, with about eighteen cows producing, and the indications were that January would be even better. When most of the cows in the Plains country were at minimum production those on the station farm are producing as well or better than in summer, and it is being done on feeds grown on the farm, with the addition of a small quantity of concentrates in the shape of cottonseed cake meal.

The herd is an interesting one from the breeder's standpoint. Its foundation came from a homestead in Cheyenne county on which Mr. Adams located after he finished his course at Kansas Agricultural college. They were scrubs—just ordinary Hereford stock such as many prairie farmers milk for a little while each year. He picked out the fifteen most likely heifers and brought them to the station when he took charge, first on a salary, as the state had made an appropriation for support of the station. However, when the succeeding legislature failed to provide Mr. Adams agreed to carry on the work under the present arrangement, which forces the farm to be self-supporting.



THE CAMERA'S CONTRIBUTION TO THE CHEYENNE WELLS STORY

No. 1—Rear view of adobe dairy barn; wing on the left is the separator house. No. 2—View of dairy barn from cow lot, showing open front construction, with canvass curtains that are raised and lowered from the inside on rollers. No. 3—Open front adobe poultry house. No. 4—Superintendent Adams turning the windlass that brings up ensilage from the four pit silos. No. 5—Holstein calves raised on the farm and housed in a separate adobe barn.

Bought Registered Stock.

At the end of the first year Mr. Adams went to eastern Kansas and bought a registered Holstein bull and cow and calf. This was the foundation stock for the present herd, which now comprises about half grades and half purebreds. The milk is weighed and tested and close record is kept of every animal's performance, this record being a part of the demonstration work required by the state.

A milking machine is used, with a 3½ h. p. gasoline engine furnishing the power. The engine also runs the separator and the washing machine. One and a half horse would be sufficient, but the superintendent believes in being prepared for emergencies.

The cows get about all the ensilage they can eat with relish, and the fresh ones receive two pounds of ground cottonseed cake and the strippers one pound a day. For outside feeding they get plenty of roughage, a mixture of kafir, milo and cane that is bundled and stacked in tiers, so that it can be mixed in forking into the feeding trough.

Buildings Are of Earth.

One might infer that as the state furnishes the buildings this herd is housed in a dairy palace, but the contrary is true. There is no steam-heated, electric lighted "apartment" such as the agricultural journals like to illustrate for pampered queens of the cream pot. Nothing like that at Cheyenne Wells. On the contrary, there is just a plain cow barn built of sun-baked earth, locally known as adobe—unburnt brick dried in the sun. As a matter of accuracy, the original dairy barn was not built of bricks, but in a solid mass of adobe. Additions were built of bricks. The roof is of corrugated sheet iron, which is the only unsatisfactory feature of construction, the roof, after seven years' service, now showing crevices. Some other material will probably be used when reroofing becomes necessary.

The walls are apparently growing harder with the passing of years. A blow on the walls meets with the same resistance as that which comes in striking fireburnt brick. It has a hollow sound—the sort of a faint ring that well-made pottery gives. There is no sign of crumbling. In the dry atmosphere age hardens the adobe.

Built the First Pit Silo

The writer journeyed to Cheyenne Wells principally to see this barn and the four pit silos under the same roof, but surrounded by newer walls and separated from the main barn by a partition. Superintendent Adams built the first pit silo in Eastern Colorado and he liked it so well that he has been building them ever since. While he now has a capacity of 210 tons on the station, he is not yet satisfied, but wants two more. At present he is provided with ensilage for two seasons, but he believes that he should have enough for one more season, in order to guard against all contingencies.

The year 1915 was a good one for Eastern Colorado. There was ample rainfall and forage crops gave abundant yields. Adams filled his four silos in the fall of that year. He fed liberally and carried one silo full over for 1916. He is now feeding out of this, as the 1916 crops were scant. With five or six silos he could have filled them all in 1915 and had enough to carry him thru a possible dry period during the coming summer. He may not need it, but his theory is that the silo is insurance and his plan of farming is so arranged that, in wet years, he lays up feed for the inevitable dry seasons.

One hundred dollars a midwinter month income from cream in a year of short rainfall, milking less than twenty cows, is a good showing and the silo is the only thing that makes it possible. It can't be done on dry feed. The silage carried over from 1915 was milo and it was as fresh and fragrant as tho it had been put up in the past summer. There was about five feet left in the bottom of the silo when the writer examined it the last week in December, but there was another silo filled with corn that was expected to keep the milk coming until July, 1917. This corn, tho short in stalk, made good grain. The yield of grain would not have been more than 10 to 12 bushels per acre, but used as silage the combination made a rich feed, as the proportion of grain to stalk was large.

The prairie grass of Eastern Colorado provides a nutritious feed green or dry, but it often happens that a midsummer dry spell will turn the grass and while it still makes good pasture for stock cattle, it will not sustain a profitable flow in milk cows.

Continued on Page 18

Year's Record of Colorado Boys' and Girls' Clubs

ONE WESTERN SLOPE GIRL PUTS UP FOUR HUNDRED QUARTS

THE boy of today who is to be the farmer of tomorrow, must employ more scientific methods in agriculture if he is to succeed, because free or low priced land is rapidly disappearing; because hand labor cannot compete with machinery; because efficient labor is not only costly but hard to obtain; because all farm equipment is increasingly costly; in short, because more dollars, on which returns must be made, must be invested.

The demands for changes in the home are as imperative; the pump and pail, milk pan and hand churn, washboard and tin cooking utensils must follow the spinning wheel and knitting needle; scientific methods in household arts must prevail if the housewife of tomorrow, who is the girl of today, is to fill the larger place created for her.

Thus it behooves us to make more of our conditions. We can do this best by education and training thru information which permeates the lives of the rural population, rather than by forcing on them the unacceptable. By training our present generation of boys and girls we shall have a future generation of substantial farmers, who will love their work and realize that the practice of agriculture offers as great an opportunity for scientific study, as much satisfaction and as substantial material rewards as is offered by the so-called professional life. —W. E. Vaplon, State Leader Boys' and Girls' Clubs.

Work Started in 1913

The accompanying statement epitomizes the opportunities and objects of organization of boys' and girls' agricultural and household clubs in Colorado. The work is new in this state. It is carried on under the department of rural and industrial education of Colorado Agricultural college, the teaching and organization staff comprising the following named persons: C. G. Sargent, professor of rural education; Margaret E. Durward, associate professor; W. E. Vaplon, state club leader; Maude E. Sheridan, assistant leader. The first organizations were formed in Colorado in 1913, but a state leader was not employed until August, 1914. Since that time there has been satisfactory progress, the work of organization being carried on only in communities that were prepared to foster it. Counties having the services of an agriculturist have naturally been the first to take it up, but in several counties where no agriculturist is employed the school superintendents are supervising local organizations.

Lucile Smith, aged 12 years. Member of Girls' Canning Club of Appleton School, Mesa County, Colo. She Canned 400 Quarts Last Summer and the Product of Her Industry is Shown in the Picture

Any boy or girl between the ages of 10 and 18 years may become a club member.

The work is arranged progressively in three-year courses and ratings are based not on high crop yields, high percentages of gain in feeding, or finished excellence in workmanship so much as upon the intelligent effort put forth in seeking to accomplish the desired end. That is, the boy or girl who, under adverse conditions, puts his or her best effort into the task is entitled to as high a rating as the member who, under unusually favorable circumstances, obtains maximum results. In this respect the Colorado plan differs from that followed in most other states where similar work is carried on. For that reason we cannot present to our readers, in publishing the annual report of the state leader, any remarkable crop yields, or other abnormal accomplishments. The record, however, is that of consistent effort on the part of the boys and girls who remained in the clubs and finished the season's work according to instructions. This conservative plan will accomplish much more in the end for agriculture in Colorado than any spectacular feature of prize winning, such as transcontinental booster trips of boys and girls who have made high yields by the use of cash and fertilizers.

Statistical Information

Statistical information on the work of 1916 is as follows: Value of all club products, $17,506.55; cost, $6,399.16; cost of supervision, state, county, etc., $5,300; profit to the state, $5,807.39. (This does not include the production of the large number who carried on the work but did not send in a final report. Less than half of the club members made such report.)

Corn Project Results

Sixty corn clubs were organized, 28 of which completed the work, these 28 having a total membership of 222 and each member cultivating one acre of corn. The total number of bushels grown by club members reporting was 6,882, at a value of $6,400.26, costing to produce $2,808.30, and showing a net profit of $3,591.96. The average yield per acre was 31 bushels; average cost per acre $12.65, and average profit per acre $16.18.

Potato Project

Eleven potato clubs were organized and 81 members turned in reports, each cultivating one-eighth acre, on which 1,961¾ bushels were grown, at a value of $2,452.19. The cost of production was $695.70, showing a net profit to the members reporting of $1,756.49. The average yield per plat was 174 bushels; average cost per plat $61.84 and average profit per plat $175.65.

Canning Clubs

Total enrollment in canning clubs was 414 and 227 members turned in reports. Each cultivated a tenth of an acre of garden truck. Value of fresh vegetables canned, $5,615.80; cost of production, $2,007.39; net profit, $3,538.41. The average yield per plat was valued at $23.40; average cost per plat, $8.47; average profit per plat, $14.93.

Poultry Clubs

Total enrollment in poultry clubs, 328; total reporting, 196; total number of young chicks hatched, 2,156; total value of poultry produced, $1,778.70; total cost of production, $270.48; total net profit, $1,508.22. Average number of units, 11 chicks; average cost of production,

Continued on Page 15

Exhibit of Boys' Club, Monte Vista, Colo. E. H. Thomas, District Agricultural Agent, and Edward Parmenter, Former County Superintendent of Schools, Appear With the Boys. The Jars of Fruit Were Put Up by Some of the Boys

Farm Loan Board Announces District Boundaries

Contrary to all expectation and in complete disregard of the wishes of prospective borrowers in the Rocky mountain states, the federal farm loan board failed to provide a district bank in a region that, with the sole exception of the twelve Southern cotton states, suffers most from the exactions of the usurious money lender. Our sentiments in regard to the decision of the board are set forth more fully on the editorial page of this issue. An effort will be made to rectify the error of the board, the first step having already been taken at Washington by the introduction in the senate of a bill, fathered by Senator John F. Shafroth of Colorado, providing for the creation of a thirteenth district, comprising the states of Colorado, New Mexico, Wyoming and Utah, with headquarters at Denver.

Following are the twelve districts outlined by the board, together with the cities selected as the headquarters of each district:

District No. 1, Springfield, Mass., covers Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey.

District No. 2, Baltimore, covers Pennsylvania, Delaware, Maryland, Virginia, West Virginia, District of Columbia.

District No. 3, Columbia, S. C., covers North Carolina, South Carolina, Georgia, Florida.

District No. 4, Louisville, Ky., covers Ohio, Indiana, Kentucky, Tennessee.

District No. 5, New Orleans, covers Alabama, Mississippi, Louisiana.

District No. 6, St. Louis, covers Illinois, Missouri, Arkansas.

District No. 7, St. Paul, covers Michigan, Wisconsin, Minnesota, North Dakota.

District No. 8, Omaha, covers Iowa, Nebraska, South Dakota, Wyoming.

District No. 9, Wichita, covers Colorado, Oklahoma, Kansas, New Mexico.

District No. 10, Houston, Texas, covers California, Nevada, Utah, Arizona.

District No. 12, Spokane, Wash., covers Washington, Oregon, Montana, Idaho.

Are national farm loan associations confined to county lines, or may they organize according to neighborhood lines regardless of counties?

Can more than one association be organized in a given territory?

Those questions were put to Mr. W. W. Flannagan, secretary of the federal farm loan board, and he replies as follows:

"Farm loan associations may operate in any territory they choose, so long as they outline this territory in their articles of association. There may be more than one association in a given territory."

To make sure that this was the correct interpretation of the law Western Farm Life asked Secretary Flannagan of the Farm Loan board for an explanation of the provision and his reply is as follows:

"You quote this sentence from my previous letter under date of December 5th, viz: 'There may be more than one association in a given territory.' There seems to be no reason why this is not perfectly correct. One association may desire to operate within a whole county; another association may desire to operate in the southern part of the county, or in a very limited locality within that county. In certain parts of the county some members may not be desired in one association while they might be gladly admitted into another. The fact is that each association has a perfect right to designate its own territory, and if it can procure a requisite number of persons to form an association who desire to borrow the requisite amount of $20,000 proscribed by law, there is no reason why an association could not operate within a territory already occupied or partly occupied by another association."

While we believe there are serious objections to this provision, introducing the element of competition and giving opportunity for the exercise of the spirit of jealousy and community division, it has some advantages in sections of the country thickly populated. At any rate it is the official interpretation of the law. It should not be used, however, as a means of stirring up discord in localities where associations are in process of formation. One strong association in a community certainly is to be preferred to two or more weaker ones, that in a few years will be on the ragged edge of dissolution because they cannot keep their membership above the minimum. Borrowers should have the future in mind when they organize. There is a time coming when short-time loans will begin to run out and new members will be needed to keep such associations alive, so make them big enough at the start and let one do wherever it can possibly serve the needs of a community. You must look to the protection of your own credit.

It is estimated that the man who ships 20 cars of grain containing 20 per cent of moisture pays freight on one car of excess water, using 15 per cent moisture as a basis.

Meeting of Lincoln Farm Bureau

FARMERS DISCUSS SILOS AND DAIRY BREEDS

KIT CARSON and Lincoln counties have had one agriculturist, Prof. P. N. Flint, who had charge of animal husbandry work at several agricultural colleges prior to joining the farm missionary staff of Colorado. His work in the two counties has been so fruitful of results, although only dating back a year and a half, that Kit Carson county decided recently to ask for all of his time. The matter was taken up with State Leader Lovett, who favored the change, because the territory is too large for one man.

Mr. Lovett addressed a communication to the Lincoln County Farm Bureau, which met at Hugo December 28, telling of the action of Kit Carson county and urging that county to take the matter up with the commissioners. The Farm Bureau, after a brief discussion, was of one mind, namely, that the county should have an agriculturist devoting all of his time to Lincoln and that the man should be Prof. Flint. So both counties are claiming his services.

The bureau adopted strong resolutions urging the commissioners to make the necessary appropriation for an agriculturist, but at the time this is being written the matter of which county is to have Mr. Flint was still unsettled.

There was an interesting silo discussion at the meeting of the bureau. F. B. Miller of Karval started it by stating that he believed cane preferable to corn for silage. He said he got as much ensilage from 15 acres of cane as he did from 25 acres of corn and that any advantage corn has in feeding value was more than overcome by the additional tonnage of the cane. One year he was obliged to fill his silo with immature cane and other years his cane was hailed down to one-half size, yet, in all cases, he got good ensilage out of it, more and better than he could have got out of the same acreage of corn under similar conditions.

"You can't cut it too fine," was his advice. "Keep the air out; pack it down well. Have it thoroughly mature for silage and take out the seed, as the cattle do not get the feeding value from the seed, which goes through them whole."

J. C. Anderson of Genoa, who followed, said he preferred corn to any other silo crop; in fact, he did not care for silage in feeding cattle in the open, but preferred shocked corn, cut green. He said if a farmer fed in the barn, ensilage was all right.

J. M. Jacket of Genoa agreed with Mr. Anderson's statement in the matter of dry fodder for stock cattle. He said that, if fed outside, the ensilage freezes on the ground. He has put up corn whole in the silo and found it satisfactory. A season like the last he favored saving the expense of cutting and ensiling the stalks just as they come fro mthe field.

Another farmer said he got enough ensilage from nine and a half acres of sod corn to feed twenty head of cattle from February to June, and that the herd could not have been kept up more than two months on an equal quantity of dry fodder.

F. H. Blasey of Boyero in discussing type of cow best suited to eastern Colorado, brought out the strong points in the dual purpose, but declared that in reality there was no dual purpose animal, because if we breed for milk we get away from the beef type. For the present, he said, the dual purpose fills the bill, but farmers on the plains must have the future in mind. There is a shortage of dairy products; millions of dollars go out of the state annually for dairy products. He advised keeping more of this money at home, and said that, for best results, the "old black and white is the thing." He enlarged on the good qualities of the Holstein, advocated cow testing associations and told his fellow farmers that they had to feed for milk production, no matter what breed of cows they had, so why not get one that has high producing powers as well as milk that meets the butterfat tests?

Malcolm McLeod, president of the bureau, was in the chair, and the secretary is P. O. Hedlund. County Agriculturist Flint, through whose efforts the bureau was organized, was there with advice, suggestions and answers to questions brought out in the discussions. W. E. Vaplon, state leader of Boys' and girls' clubs, and Alvin T. Steinel of Western Farm Life were the outside speakers.

More Big Wheat Yields

Boulder county, Colo., holds the record for highest wheat yield under irrigation in the Rocky Mountain region. Albert Lund, whose farm is located five and one-half miles south of Longmont, produced an average yield of 81½ bushels per acre on 12 acres. This is six bushels per acre than the yield reported by Benjamin Reese of the same county, thru the columns of Western Farm Life in October.

The Farmers' Exchange Bulletin gives complete figures on Mr. Lund's yield, which has been officially checked. It shows a yield of 978 bushels of Turkey Red wheat from 12 acres of measured ground. The field was in alfalfa four years, the third cutting in the fall of 1915 being turned under for green manure. Only 32 pounds of seed was sown to the acre. It was sown October 3 and nothing done until spring, when a light harrowing was given. The wheat tested 64½ pounds, and it was sold at $2.12 per hundredweight, a revenue of $111.42 an acre. This wheat took second prize for quality at the Boulder county fair, shown with eleven other entries.

Other heavy yields reported were Benjamin Reese, given as 75 bushels, and Sam Keller and Archie Logan, the first-named 74.7 bushels and the latter 74 bushels.

Under dry farming conditions the highest authentic yield reported from Colorado is that of C. A. Jeffers, near Loveland, who got over 51 bushels per acre.

Crops on Drained Land

(1) I like your paper and would like to see more about what to plant on land just drained, or should one wait until it has drained out the alkali some?

(2) Can one who has a long-time mortgage on his farm borrow money from the Farm Loan Board to pay it off in order to save the interest? —N. A. P., N. Mex.

(1) If your land was drained last fall, it should be in condition by spring to grow a fairly good crop. I would not hesitate to plant it in the spring, since it will continue to drain while the crop is growing. We have been running some special articles on land drainage written especially for Western Farm Life by one of the drainage engineers of the United States Department of Agriculture.

(2) You should have no difficulty in borrowing money from the Federal Farm Loan Bank in your district, when it is established, to pay off any mortgage that you may have on your farm, providing the loan required is not more than 50 per cent of the value of the land and 20 per cent of the value of the permanent improvements. That is, assuming that you could get the consent of the party holding the present mortgage to pay it off before it matures.

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Mr. S. R. Conner, Pauls Valley, Oklahoma, raised approximately 26.27 bushels of wheat per acre on his Bull Tractor plowed land in 1916, while his neighbor, in the same section, plowing with horses, secured only 9 1-3 bushels per acre. Mr. Conner also raised 53.84 bushels of oats per acre, while his neighbor got 31 bushels. Another neighbor of Mr. Conner's, with the same kind of soil, raised 10 bushels of wheat per acre. We have sworn affidavits from everybody concerned in this case.

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Sudan Grass Seed Situation

THE natural inference would be that now since Sudan grass has been grown in this country for several years and has received quite general and wide distribution through out the United States, that the price would be lower this year than over before. Sudan grass seed is scarce this year and the price is abnormally high. The facts in the case are that the seed was just not produced this year. Of course, a much larger acreage was planted to this valuable crop last year than ever before. Many farmers, realizing its value as a forage crop, grow it for this purpose entirely and a large number of those who grew it for seed failed to realize more than half a crop. There was comparatively no seed at all raised in Kansas and Oklahoma in 1916 owing to the abnormally early frost in that section. The early frost also materially cut down the seed crop in Texas. Lubbock, Texas, which has been the large Sudan grass seed center since its advent into this country, produced only a small part of the seed that has been produced there the past several years. The cold fall, high winds and early frost cut the yield down decidedly in this section. Illinois produced about two carloads of seed this year. There have been a number of small amounts of seed produced in scattered sections, but usually not more than enough to supply the local demand.

With Kansas and Oklahoma producing practically no seed for commercial purposes and the Texas crop cut short, and with perhaps a 50 per cent increase in the demand for this crop over last year, the scarcity and consequently high price of seed can readily be understood. In September a lot of seed sold for 5 to 7 cents per pound. In October the price ranged from 10 to 12 cents per pound. Many of the seed houses were able to buy seed at these figures before it became generally known that seed of this crop was unusually scarce. The producer who still has seed is now getting from 25 to 30 cents per pound, and it is practically impossible to obtain seed from the grower at any price. He does not have it. The seed has now practically all gone into the hands of the seedsmen. Seedsmen are now quoting this seed at 30 to 50 cents a pound. They have had a hard time getting what they have for sale now and will not likely be able to obtain much more. The demand will probably cause the price to advance.

It is not wise to invest much in new and untried seeds which are offered for sale at high prices. Sudan grass, however, is no longer an experiment, but has been amply demonstrated by the experiment stations and the practical farmers to be both a valuable hay and pasture crop. It is, therefore, to be hoped that the readers of Western Farm Life will not let the high price of Sudan grass seed stand in their way of planting at least a few acres of this crop. Five pounds will be sufficient to plant an acre; or even three or four pounds will do. Even at 50 cents a pound this would make the seed for one acre cost $2.50 at the outside. Cane seeds are also high. Cane seed, which is another scarce crop this year, if planted for hay purposes would cost practically as much per acre as Sudan grass.

A few acres of Sudan grass for pasture and sufficient for hay purposes will be a good investment for this coming year even at the high price of seed. Seed should be ordered now while they can still be obtained at around 30 cents a pound. The price will not get any lower and the seedsmen will not have enough seed to supply the demand this year.—R. E. Karper, Texas Agricultural Experiment Station.

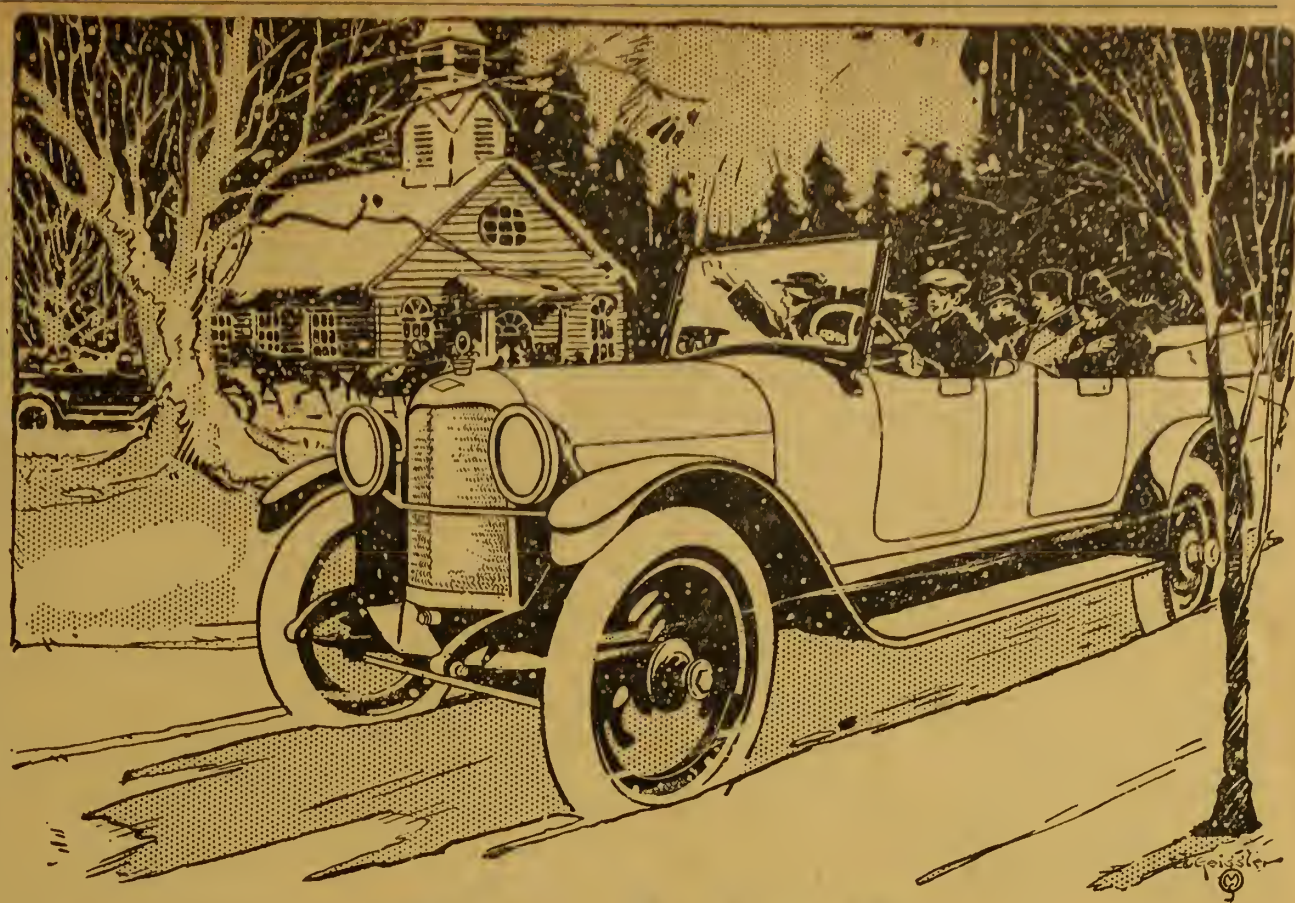
Big Insurance Deal

Announcement is made that The Guarantee Life Insurance Company of Houston has been reinsured in The Farmers' Life Insurance Company of Denver, Charles O. Austin, the Texas commissioner of banking and insurance, having on December 21, 1916, formally approved the reinsurance contract. Under the terms of the deal the entire assets and business of the Guarantee Life are taken over by the Farmers' Life with home offices in the Gas and Electric building, Denver. At the time the deal was arranged, the first of October, the combined assets of the two concerns amounted to more than two and a half million dollars, with about seventeen millions of insurance in force.

This is one of the largest reinsurance deals of recent years and makes the Farmers' Life one of the strongest companies in the West. A southern office will be maintained in the new ten story building belonging to the Guarantee Life in Houston, Texas. The Farmers' Life is a western institution, organized by leading farmers and business men about five years ago.

Ex-Governor E. M. Ammons has been president of the company since 1912 and was one of the organizers. The other officers are: L. C. Fulenwider, first vice president; John Orr, second vice president; W. M. Glenn, third vice president; D. A. Lord, fourth vice president; Chas. H. Tully, fifth vice president; E. M. Sabin, secretary and counsel; Calvin Fleming, treasurer; J. A. O'Shaughnessy, general manager; Dr. J. E. Kinney, medical director.

The company has been operating in Colorado, Kansas and Nebraska and the acquirement of the business of the Guarantee Life now extends its territorial limits to include the entire state of Texas and portions of adjoining states.



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Colts Are Not Doing Well

Western Farm Life Service Bureau:

I have two colts that seem to be growing too slowly. They are also very poor and have shaggy hair. They have no lice and are on best of pasture with their mothers. They get ground oats and bran each morning before going to pasture and each evening before being shut in to good hay all night. Am at a loss to know what to do and would appreciate your advice. I am fifty miles from a veterinarian and it would be out of the question to secure the services of one.—C. E. E., Larimer Co., Colo.

While we can only guess as to the cause of the colts doing so poorly, it is probable that they are suffering from worms, in which case a pint of raw linseed oil in which an ounce of turpentine is incorporated should relieve the condition. It may be necessary to repeat this treatment after a week or ten days. Great care should be used in drenching to see that the oil does not go into the lungs, as in that case a mechanical pneumonia results which is always fatal. If the colts are difficult to drench, iron sulphate can be given in a little grain in two-dram doses in the feed daily, and kept up for a week or ten days.—I. E. Newsom.

Source of Smut in Corn

Western Farm Life Service Bureau:

Does smut in corn originate from the soil or from the seed? Please advise a preventive. Are corn and wheat smut alike? Are they treated in the same way?—E. K., Weld Co., Colo.

Smut in corn is a specific disease. The smut itself is a plant which grows as a parasite inside the corn plant. A smut plant consists of small colorless filaments which grow thru a larger portion of the succulent parts of the corn plant. The smut which we see—that is, the dark, swollen masses—are the reproductive parts of the smut plant. The smut inside these dark masses is made up of tiny spores, every one of which is capable of starting a new smut plant. The spores correspond to the seeds of higher plants. Since these spores may fall on the corn plant and gain entrance at almost any period in the growth of the corn plant, any treatment of the corn seed has little or no effect on preventing the smut disease. Smut seems to be worse in years when the corn is more or less stunted by dry weather; also in years when early injury from hail breaks the corn plant at various points. This is probably due to the fact that these conditions weaken the corn plant and permit the smut disease to gain entrance more easily than under ordinary conditions. The smut spores may remain viable in the soil for some time.

The smuts of corn and wheat are distinct plants, just as distinct as corn and wheat themselves. Wheat smut can be prevented by treating the seed, because the disease gets into the wheat plant at the time the seed is sprouting. At the present time there is no known treatment which will prevent corn smut. Rotations and good culture seem to reduce it, but do not entirely control it.—Alvin Kezer, Colo. Experiment Station.

Feterita at 5,400 Feet

J. B. Cox of Bennett, Colo., got some feterita seed from the Department of Agriculture at Washington. He planted it about the middle of June, 1916. His farm is at an altitude of about 5,400 feet. The plants came up, but there was no rain for many days. Finally in August, when the showers came, the feterita began to shoot up and it made rapid strides and reached maturity. Fine heads were exhibited at the short course in Bennett from this little patch of drouth-resistant grain sorghum.

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As to Appraisal of Lands

That the federal farm loan act will stimulate good business practices among farmers, and cause them to keep account of their operations, is the opinion of O. R. Johnson of Missouri Agricultural college, who bases that opinion upon the clause in the law covering appraisal of lands. That clause is well worth careful study. It reads, in part, as follows: "In making said appraisal the value of the land for agricultural purposes shall be the basis of appraisal and the earning power of said land shall be a principal factor."

The Missouri statement declares that the earning power of individual farms and individual systems of management will be contemplated in arriving at an appraisal under the provision above quoted. We quote Mr. Johnson as follows: "Under this system of appraisal recognition is given to the fact that the same farm may be worth more under one farmer and one system of management than under a different farmer and a different system of management—in other words, of two farms that now may be valued the same, the one with the best income can secure the larger loan."

While we are of the opinion that this draws the conclusion a trifle stronger than the language of the law justifies, nevertheless there is in the first quoted provision the basis for such an interpretation. A good deal will, of course, depend upon administration of the law and the view the appraisers may take of its intent. In the case of two farms of equal intrinsic value, as to soil, improvements, etc., the earning capacity of one is equal to the other, and it is doubtful whether differences in the farm owner's intelligence and ability can be taken into consideration by an appraiser from the district bank, who would hardly be in position to draw proper conclusions regarding the man. His observations would cease when he took into account the earning power, the value of the land for agricultural purposes, and the system by which it is being farmed.

However, when it comes to the appraisement made by the loan committee of the association of borrowers the personal equation assumes much greater importance. In other words, a notoriously careless or lazy farmer, or one lacking in knowledge or ability to farm properly, would have a hard time convincing his immediate neighbors that, because he happens to possess land of equal value, intrinsically, with that of an able and energetic neighbor, he should have a loan of equal amount. This is only another point showing the value of community action in carrying out the provisions of the law.

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Feeding Value of Kafir

The Bureau of Chemistry at Washington has been making tests of the feeding value of plants, notably of kafir, finding in the nitrogenous compounds of that grain a new protein. This is said to contain the amino acids lysin and tryptophan, both indispensable to the normal nutrition of animals. The fact that these acids are not found in the protein of Indian corn apparently gives kafir an advantage in feeding and enables the chemists to work out an accurate basis of comparison. Heretofore the feeding value of kafir and its allied grains has been generally reckoned as ten per cent less than that of corn, based on fattening tests with animals more than on a comparison of chemical constituents.

Another chemical discovery announced by the department is the presence in peanuts of diamino nitrogen. This form of nitrogen, we are told, does not exist in adequate amounts in the cereals which constitute most of our feeds, hence the addition of peanuts in some convenient form to the ration should have a beneficial effect. Practical feeding tests are promised to determine the full value of these chemical discoveries.

If borne out in actual feeding the discoveries will prove of importance to the southern portion of the plains and intermountain country, where the kafirs flourish and peanuts are produced to a limited extent as a feed crop.

Results will be watched also by feeders in adjacent territory who are looking to kafir and peanuts as a source of grain and concentrates to take the place of corn and cottonseed meal when the latter are too high.

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Southern Demonstration Work

Crop yields one hundred per cent better than the average for the section are reported by the Office of Extension Work South, in an annual review covering counties where demonstration agents are employed. There are in the southern work over 700 men and some 400 women agents, in addition to a number of special organizers for boys' and girls' clubs. These agents carried on direct demonstration work with 110,000 adult farmers, 63,000 boys, 48,000 girls and 30,000 women. Stress has been laid in the thirteen cotton states, particularly on diversified farming with the result that, in the last fiscal year, there was an increase in cotton acreage of 15.7 per cent, 22.2 per cent increase in corn acreage; 152.4 increase in wheat; 84.2 in oats, and 39.5 in hay. Demonstrations in approved methods were carried on covering nearly a million and a half acres of field crops. Four thousand five hundred and eighty-four silos were built and 1,579 dipping vats constructed under guidance and advice of county agents. This is only a part of the record of advancement due to these activities.

Work in the southern states is usually more directly with individual farmers than in the West, due to difference in character of the farming population and the South's backwardness in adopting modern methods. The results accomplished in the face of discouraging conditions are highly commendable.

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The Office of Markets

There is a refreshing tone of activity in the annual report of Charles J. Brand, chief of the Office of Markets and Rural Organization in the United States Department of Agriculture. This may be due to the peculiar line of work allotted to this bureau and its close relationship to the practice of agriculture, but careful reading of the report indicates further that those charged with the duty of investigating and simplifying marketing procedure are getting down to the core. They are not letting the matter rest with investigations and recommendations, but things are actually being done to help the farmer market his produce. Methods are being put into practice to demonstrate their value, authentic market reports are given the farmer and the bureau is getting right down to the business of cutting costs for the producer and consumer.

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Do Your Spring Buying Now

Western farmers had some experience this winter with car shortage in moving their crops. They will feel it again in the spring, unless orders for needed supplies are placed immediately. There exists at present the greatest freight congestion in the history of the United States. Embargos have been declared by nearly all western trunk lines against certain classes of freight, in an effort to clear up the congestion at terminal points.

However, this measure will bring relief only for a short time. Nothing like a normal situation can be restored for many months.

This means that the farmer who expects to buy new machinery for the approaching season of planting, or for the next harvest, or who needs equipment of any kind such as silos, cream separators, milking machines, nursery stock, spray materials, seed, etc., should order immediately upon reading this. DO YOUR SPRING BUYING NOW IF YOU WANT THE GOODS DELIVERED.

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Feed Value of Beet Tops

Hans Mendelson is quoted in the Morgan County Farm Bulletin as follows: An acre of beet tops from a normal beet crop, properly taken care of, produces as much food as half an acre of corn silage. Whatever half an acre of corn silage would be worth to you is the value of an acre of beet tops. If you can afford to raise corn silage you certainly can afford to take care of your beet tops. Around Johnstown, where they make money from dairying, tops were fed as late as May this year. When they get thru with the beet tops they feed silage. On the farms visited, an acre of tops, according to care and the yield, furnished all the succulent feed for one cow for from 100 to 200 days.

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The Paper Shortage

Along with all other publications Western Farm Life has been made to feel the pinch of the paper shortage. We have been forced to accept from the manufacturer a supply of paper which is not up to the usual standard, and not the quality of paper contracted for, with the result that illustrations are not as clear as they should be. We regret our helplessness in the matter; it was a case of "this or nothing." We trust that our readers will be patient until the situation again becomes normal.

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Diseases of animals cause losses of $212,000,000 a year in the United States. Much of this loss is preventable.

Location of the Farm Loan Banks

We sincerely regret the necessity for adverse comment on the recent decision of the Federal Farm Loan Board announcing location of the district banks. The Rocky Mountain states grouped together according to their farm loan needs and systems of farming into a harmonious, compact and logical district, with proposed headquarters at Denver, their trading and marketing center, have been separated without regard to convenience of transportation or any other consideration of the borrower's rights.

Colorado and New Mexico have been attached to a district which has its bank in the town of Wichita, in southern Kansas; Wyoming is attached to Omaha; the farmers of Utah will have to apply to Berkeley, Calif., and those of Idaho to Spokane, Wash. What prompted the selection of Omaha and Wichita other than weight of population and the attendant political influence? We have yet to hear from the board on this point.

Farmers in the Rocky Mountain region had been led to believe that here at last we had a federal board which would adjust the machinery for carrying out the provisions of the rural credits law for the convenience of the farm borrowers. If the board acted on the assumption that the greatest number of borrowers would be found in the thickly populated districts, it is certainly guilty of a grave error in judgment. If we understand the plain reading of the law which says: "Said districts shall be apportioned with due regard to the farm loans needs of the country," then the apportionment just announced is contrary to law. Unquestionably it is the partly developed agricultural territory that most needs farm loans,, especially when such territory is suffering from oppressive interest rates.

The commercial centers of the country are overloaded with financial equipment, but perhaps the board acted on a misconception of a biblical injunction which says, "To him that hath shall be given." There must have been some reason for its action.

Western Farm Life is in touch with the farm loan needs of the Rocky Mountain states—intimately so. We have assisted in the organization of borrowers' associations. We have furnished information to thousands of farmers, in the belief that the law would benefit the rural industry and, consequently, be of help to the farm paper that serves this territory. We have not changed our opinion about the law, even if we have lost confidence in the fairness of the board appointed to administer its provisions. We shall continue to urge farmers to get together in borrowing associations, knowing that, in time, the borrowers will control the system and that it then will be free from the taint of politics, or other considerations of expediency that cannot be justified on the ground of fairness to the farmer.

We shall be obliged to tell our farmer friends that the board has not acted squarely by locating the district banks at inconvenient and remote points, thus increasing the cost of appraisement and placing immediate administration of the law into the hands of men who are not familiar with farming conditions in the vast stretch of territory that has been left without a bank.

The board cannot plead unfamiliarity with our claims. Its members heard farmers testify in the United States district court room in Denver last September that they were obliged to pay from 8 to 12 per cent plus commissions, on farm loans. A note of this kind bearing usurious interest at a rate unheard of in the Missouri valley or eastern farming sections, was read into the record at this hearing. With this testimony before them of the "farm loan needs" of this region the board proceeded to locate the banks to serve our farmers in districts where 6 per cent money is as common on farm lands as 10 per cent is in this region; where irrigation and dry-land farming are closed books; where we cannot hope for a sympathetic hearing. We have at this time nothing before us by way of explanation or justification, but we cannot be asked to suspend judgment, as the thing has been done. Boundaries may be changed and this is not the last word on the subject, but what a pity that our confidence in the board has been subjected to this rude shock.

The Rocky Mountain states that have been thus attached to districts with headquarters at remote points certainly are entitled to representation on the temporary directorship of their respective banks. It is to be hoped that the Federal Farm Loan Board will give us at least that much consideration.

Alvin T. Steinel

Comment by Farmer Putnam

HAS A GOOD TIME AT FARM BUREAU MEETING AND INSPECTING AN EXPERIMENT FARM

Denver, Colo., Jan. 10, 1917.

WELL, I had a good time last week. I went out with Vaplon to the Farm Bureau meotin' at Hugo. He is a good traveling companion. He don't let a feller git discouraged; keops a joshin' you all the time, so's you don't notice the coid weather. It was below zero and after midnight when wo got offon the U. P. at Hugo and we ast a feiler where the hotel was at and he sez, right acrost the street. Wo wcnt pn ovor where we seen a light in the winder and found the place.

The fire was out in the office and the clerk was gone to bed, hut he pinned a note on the reglster sayin' that rooms 2, 8, 10, 12 and 20 was vacant, so we went upstairs and Vaplon drew his searchlight and we found us a couple of nice cool rooms. They hain't never had no fire in the rooms since the hotel was built and they ain't no flue fur smoke to git out, consequence is no fire in the rooms. Coal awful high and besides it ain't good fur a feiler to sleep in a warm room. Weil, they had plenty covers on the bed and I was soon snug and snorin'. Vaplon picked his room on the other end of the hail from me, sayin' he didn't want to he disturbed durin' the night.

Weii, morning come quicker'n I figgered and I had to git out. Down in the dining room I met Flint, the county agent of Lincoln and Kit Carson counties. Them two counties got tired of havin' one agent between 'em and they got a divorce and both of 'em is adin' around over the prairie pretendin' to he milk cows. Them was the claimin' the chiid. I don't know what they're goln' to do ahout it. Fiint sez he iikes one as much as t'other and the stock he huilt up his Holstein herd the court'll have to say which he helongs to—Daddy Kit Carson or Mother with that is now glvin' him hundred Lincoln. dollars a month cream checks. Tho

Vaplon ast me why I didn't appiy fur one of them counties. He sez I'd make a good county agent. I told him no, I wouidn't last iong on the joh; I'd git fired fur teiiin' the truth. A county agent don't only haff to know things, hut he has to know when not to teii 'em. He's got to he a diplomat and I ain't that. I got a hahit of just bustin' right out when I've got something to say, but as long as my remarks is confined to writin' why nobody kin git at me, and I iive in such a out of the way place that they git cooled off hefore they find the ranch, so I'm safe. No, I don't want no county agent's joh. They has to he awful pertickular not to git the farmers sore and specialiy not to git the county commissioners sore. They was one of the outgoin' commissioners at the Bureau meetin' in Hugo and they ast him what he thot about the county goin' it alone in hirin' a agriculturist. He sez he allus had heen in favor of the work, but some of the taxpayers might kick on the expense.

Of course it's alright to protect the interests of the taxpayers, but sometimes I think they hetter ast how much good a thing is goin' to do, not how much is it goin' to cost. If a thing helps a county and the people need it the way to figger is the return on the investment, not the original cost. Anyhow I think Lincoln county is goin' to act favorahle, hecause the farmers at the meetin' was onanimous fur the county agent work.

Before we went over to the courthouse, where the meetin' was to come off, we called on Mr. Hediund, the secretary of the hureau and new county judge. He makes a good lookin' judge, big enough fur the supreme hench. While we was settin' around the hot blast stove Judge Miles, editor of the Range Leader dropped in, and he promised to put our names in the locals. We went and called on Mr. Mesmer too, so we'd git our names in the other paper too. I don't need to teil you-ail anythin' about the meetin' because the editor is writin' that up.

Aiong in the afternoon I left Hugo and went on over to Cheyenne Wells to see Josh Adams, who runs the experimint farm. Josh came from Kansas where he went to the Agricultural college. In his vacations he come out to Cheyenne Wells to work on the station farm which was hein' run hy J. E. Payne, a friend of mine now livin' in Okiahoma, where he works fur the Frisco raiiroad, doin' farm demonstration work. When Josh got thru college he took up a homestead in Cheyenne county, and after a whiie Payne was put on other work hy the state and he asked Josh to move to Cheyenne Wells and take charge of the farm. So he done it, hringin' some of his scruh Herefords that was masker-

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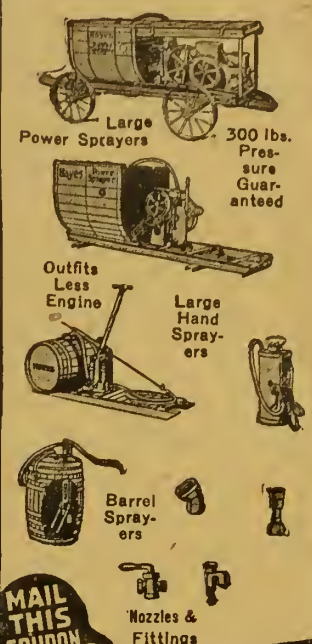

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West can elect our presidents right along, with the solid South.

I think we ought to now start hoosting for Champ Clark to succeed Woodrow.

I have one hoy, aged 18, named Bryan; one hoy five months oid named Woodrow and if I am lucky enough to ever have another, weil, Champ looks good to me. As you are somewhat of a writer, come out here next summer and write up the cattle country. You are welcome here at the ranch any time.—C. F. B.

Thanks fur them kind words. I'm goin' to try and come up next summer. Here's wishin' you all kinds of luck. They's a huil raft of good Democratic names that hain't been used much yet. I'm kinda partial to Champ Clark myself, hein' from Missouri which he is too. The editor don't allow me to write on politics, but when I git a letter from a feiler that writes so kind-a homelike that I feel like I knowed him fur a iong time, wail I cain't hep hut state my feelin's and let the editor go hang. Now let's ali iine up together, you an' Bryan and young Woodrow and now the four of us give a good old democratic whoop fur Woodrow. Whoop--ee-ee yow! That's the medicine. That's what I caiis a genuine Wyoming cowman yeli.

* * *

Dick Maxfield was down to the Denver yards iast week with a ioad of steers from his ranch near Livermore and he sez he wants me to come up sometime and write up that country. Alright Dick, when the weather is so I don't have to wear my goioshes I'ii come; I ain't no snowbird and on them cold winter days I do iove to set by the fire. I had to come down outen the Stove Prairie country; it ain't no piace fur a Missourian in winter.

THOMAS JEFFERSON PUTNAM.

Wash water used in tho churn should be approximately the same temperature as the huttermilk, or within two degrees of it.

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The Western Farm Life Service Bureau

Our readers are invited to make generous use of the Query Department. Any questions pertaining to animal husbandry and general agriculture will be cheerfully answered. You are also invited to write us any experience that will be of interest to the farmer and stock grower.

In questions relating to diseases of live stock, you should be very explicit in descriptions and in autopsy findings, if such have been made.

Eradicate Morning Glories

I have a patch of land for hay, two acres infested with morning-glories. What can I do to get rid of them?—C. W., Montrose Co., Colo.

If amber cane or sudan grass do well in your locality, probably the best thing you can do to clean up the two acres of land infested with morning glories, will be to plow at least twice each year and produce a heavy crop of cane or sudan grass on the land. These crops, if they do well at all, do so well as to smother out almost any other growth. With early disking and plowing before the preparation of the seed bed and by plowing after the chop is removed, seeding of the morning glories can almost be prevented. It is necessary to prevent seeding if the crop is to be killed out. It is quite likely that such treatment will have to be repeated for two or three years in order to be really successful.—Alvin Kezer, Chief Agronomist, Colorado Experiment Station.

Cane and Molasses

(1) How many tons of cane can be obtained per acre from an average crop of sorghum cane?

(2) How many gallons of molasses can one make from a ton of sorghum cane?

(3) Can you feed the fodder after it has been thru the mill?

(4) What variety of cane is best for this purpose?—L. J., Colorado.

You might get a different tonnage of sorghum oane from an acre in different localities in different seasons. The tonnage will vary from 1½ to 10. Even higher tonnages might be produced in occasional years under lrrigatlon In warm regions such as the Arkansas valley.

One ton of sorghum cane will yleld about 1,200 pounds of juice. This juice must be boiled down to make molasses, so that 1,200 pounds or sorghum juice will make about 40 gallons of syrup or about 345 pounds of sorghum syrup. The yield of juice may be found to vary between 700 pounds and 1,200 pounds. A 700-pound yield of juice will give about 10 gallons of syrup or about 115 pounds by weight.

The fodder, after it is run thru the mill, can be fed. In fact, if it is properly cared for by siloing, it makes a good feed. Amber cane ls the only kind to attempt for sorghum purposes in Colorado terrltory. The black ambers will probably be preferable to the red ambers, as they will mature in a shorter season. In the extreme southeast portions of the state, red amber cane might be used, as it yields heavier than black, but requires a longer season to mature.—Alvin Kezer.

Treating Potatoes

I would like to know how to treat Irish potato seed for scab. Also how to treat seed corn for smut.—T. B. K., Colorado.

For treating Irish potato seed to prevent scab, use one pint of formaldehyde to 30 gallons of water and allow the tubers to remain in the solution for about two hours. There is no seed treatment which will prevent smut in corn, simply because the corn plant may be infected at any time during its growth, even after the plant is one, two, three or more feet in height. It ls for this reason that seed treatment is ineffectlve in the case of corn.—Alvin Kezer.

Sweet Clover

With what success can sweet clover be grown and used as a rough winter food for stock? What has been the experience of others with its use? Will cattle eat it readily? How does it compare with alfalfa and other foods?—H. J. H., Colorado.

Sweet clover can be grown and used successfully as a winter hay for stock. Where alfalfa does well it ls not advisable to use it, because alfalfa will outyield it in three cuttings. Sweet clover will rarely ever make more than two cuttings in a season, and sometimes not over one. Consequently, if grown at all, it should be grown In regions too high for the successful production of alfalfa, or where for some other reason alfalfa cannot be successfully grown.

If cut at the right time, cattle will eat it readily, especially after they have become accustomed to its use. Its feeding value is very similar to alfalfa, altho there is usually more waste.—Alvin Kezer.

The Torrens System

What is the Torrens system of land registration? Please give the plan in full. Does this system save expense in looking up land titles?—C. F. C., Idaho.

The Torrens' system of land registration is designed to avoid the cost of abstract and other expense in ascertaining real estate titles, and to facilitate transactions in real estate. According to the system, a piece of real estate is registered at the office of the county clerk and a certificate of registration issued as of a certain day, and inquiries into the title of this piece of land need not go back of that date. Future transactions, such as mortgages, trust deeds, or warranty deeds, are entered very simply upon the books and upon the certificate, and at any time a new certificate may be issued, advancing the date and dropping from consideration all transactions previous to that date. It will be seen that the work and expense of preparing and examining an abstract containing all entries on a piece of land from the original patent from the United States government to the present time, will be eliminated, its place being taken by a cretificate guaranteeing title. Various methods are used in the several states to procure registration under the Torrens system. Colorado has a law providing for the system, but advantage is not being taken of its provisions. In many counties of the state no land whatever has been registered. According to the terms of the Colorado statutes, an abstract must be prepared of the piece of land designed to be registered under the Torrens system, and this must be passed upon by a referee appointed by the county court for that purpose. On judgment of this referee, after proper examination, the land may be registered and a certificate issued. Thereafter no abstract on this piece of land will be required. The Torrens system is said to be working very satisfactorily In Australia and New Zealand, where all land is so registered, and several states of the American union have adopted modified forms of the system, none of them requiring that all real estate be registered.

Six Weeks' Rest

I live seven miles from town and drive in every morning and out every night. I have a young mare coming four years old next summer, weight 1,050 pounds. She is due to foal about April 15, and I would like to know how close up to foaling time it would be safe to drive her that distance. I usually drive the seven miles in about one hour and fifteen minutes.—R. M. S., Otero Co., Colo.

A reasonable amount of easy work is good for a pregnant mare almost to the time of foaling, but I would not keep this mare on the road after the first of March.—G. H. Glover, Veterinary Dept., Colorado Agricultural College.

Examination of Stallion.

Kindly advise how often a stallion standing for public service in this state must be examined, and what is the amount of the license cost for standing same?—J. T., H., Morgan Co., Colo.

A stallion standing for public service must be examined yearly and the regular fee for examination is $3.00, but where a veterinarian must travel some distance to make an examination, he is allowed to charge mileage in addition.

Kerosene in Radiator

A friend of mine who uses his auto quite a bit in the cold winter weather on short trips, puts kerosene in his radiator instead of water, and with apparent good satisfaction and service, as he can leave car stand anywhere and at any time without danger of freezing and breaking radiator. Don't you think it is dangerous to put kerosene in the radiator from the standpoint that the same heats up and sometimes gets pretty hot, or will kerosene explode when heated in this way, or does it have to come in contact with fire? The kerosene will not of course hurt the radiator or engine, and will not freeze, but what do you think about the other side of it? If there is no danger, every farmer and car owner could use kerosene in cold weather.—R. A. E., Washington Co., Colo.

Kerosene will not explode on getting hot. Some people put kerosene in their radiators without any evil results. Of course, it heats more quickly than water and evaporates rapidly.—L. D. Crain, Department of Mechanical Engineering, Colorado Agricultural College.

Bleeding Warts

Western Farm Life Service Bureau:

A. W. K., Boulder Co., Colo., inquires in November 15th issue of Western Farm Life how to cure bloody warts on mules and horses. Please tell him to take oil of cinnamon and with a feather dampen the wart all over several times a day. I have cured many bloody warts and they never come back. Ten cents' worth will cure them. Please write me the result of your trial. Yours for the sake of the mule. —J. M. H., Collbran, Colo.

Moldy Cornstalks

I have a two-year-old filly. Some time in June she received a wire cut across the pastern joint, not deep but badly haggled. It has practically healed, but the entire leg is swollen. What would cause this, and what, if anything, would drive out the swelling? I also have some calves that have the scours; they are running in cornstalks and dry pasture and are fed nothing else. The water contains some alkali. What would help them?—C. C. K., Colorado

The swelling will disappear in part, but will probably never become normal because of the formation of connective tissue which is permanent. Rubbing with mild liniments, exercise, and bandaging the leg, might help some.

The corn stalks are probably moldy, and this causes your calves to scour. It might be infectious scours. If the calves are accustomed to alkali water it would not be considered responsible for the diarrhea in this instance. Write to the Experiment Station at Fort Collins for information, giving details, symptoms, etc.—G. H. Glover.

Digestive Troubles

Have a Jersey cow whose udder is hard and don't give much milk. What can I do for her? —M. P., Pueblo Co., Colo.

It is possible that your cow is not digesting and assimilating her food properly. Rub her udder twice daily, well, with melted lard, as warm as you can bear it with your hand. Knead this in the udder thoroly, and give her one ounce of cooking soda, one ounce of powdered charcoal, and one ounce of gentian in feed twice daily. If she is disinclined to take exercise, she should be walked around twice daily.

How to Remove Warts

In reading your excellent farm paper, I find an inquiry about how to remove bleeding warts from stock. I have removed several large warts by applying sulphuric acid. Saturate a piece of cotton with the acid, hold it with a pair of nippers and apply it to the wart; burn it thoroly once a week till it is gone. Ten cents' worth of acid will be sufficient.—W. E. Wilson, Yuma, Colo.

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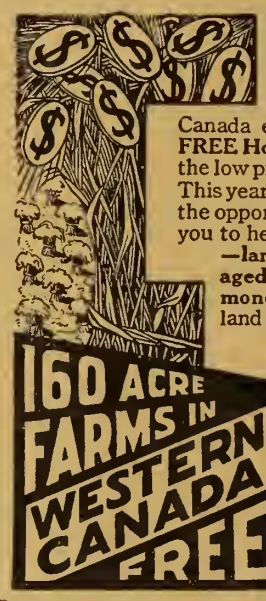

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The Government this year is asking farmers to put increased acreage into grain. Military service is not compulsory in Canada but there is a great demand for farm labor to replace the many young men who have volunteered for service. The climate is healthful and agreeable, railway facilities excellent, good schools and churches convenient. Write for literature as to reduced railway rates to Supt. of Immigration, Ottawa, Can., or to

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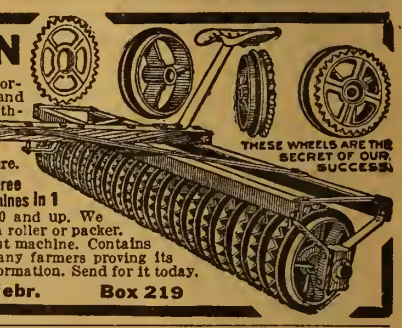
For WHEAT and CORN



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LEGAL QUESTIONS

The following questions regarding legal matters have been answered by Peters & Barker, Attorneys, Equitable Building, Denver, Colo.

Line Fence

Last spring I put in our half of one of our line fences. The owner of the quarter adjoining has a two-wire fence and he promised to fix it up, put in more posts, etc. Have not talked to the renter in regard to the matter but up to date, said renter has not taken any action in it. What can I do about it?—W. M. P., Willard, Colo.

Where there is a partition fence, each owner must keep his half of the fence in repair. If your neighbor fails to keep his in repair, send him a written notice to repair his fence, and keep a copy of the notice you send him. You can send it by registered mail. If he does not repair it in a reasonable time, you can go ahead and do the repairing yourself, and collect the costs of these repairs from the owner by suing him, and the amount you have paid is a lien against his land.

Depends on Contract

I rented a neighbor's place and raised a crop in 1915, crop rent. In stacking the grain it was stacked in separate places, so as to have the straw divided and for the convenience of the landlord my part was not hauled away, and he now claims it, saying I had straw there last year but have none now. Can he hold the straw?—C. C. R., Weld Co., Colo.

Your rights would depend entirely on your contract. If this part of the straw belonged to you under your contract for this year, all you will have to do is to identify the straw, and the landlord cannot hold it.

Not Contestable

(1) When A filed on his land, it was found that B had a fence one-half mile long fencing on 80 acres of A's land. A has told B more than a year ago to remove said fence but B has not done so. Can A now claim the fence?

(2) A filed on a piece of land in May; in November he built a house on same and stayed one night, not returning until the next May. Is he contestable? He has lived there ever since and complied in every way with the homestead laws.—R. T., Wyoming.

(1) B would have a reasonable time after A filed on this land in which to remove his fence. If you notified him to remove his fence more than a year ago and he took no steps to move it, the law might consider that he has abandoned his rights. It would be for the jury or the court to say whether he had had a reasonable time. We would think that more than a year would be a reasonable time.

(2) If the homesteader has lived upon his land from last May continuously to the present time, it would not be contestable.

Service Fees for Stallion

Can I collect service fees for stallion that is afflicted with hog spavin?—L. H. S., Prowers Co., Colo.

If your stallion is afflicted with any disease that would be transmitted to the colts, you cannot collect service fees. When you stand a stallion, you impliedly warrant that he is in good condition.

Liability of Railroad Company

Will you please advise on a legal point regarding the shipment of sheep from the interior of Colorado to La Junta, thence over the Santa Fe to Arizona?

When the sheep were loaded into cars at La Junta the cars had been treated to a formaldehyde or other poison disinfectant for scabies; the interior of the car had been washed with this solution. The sheep were salt hungry and licked the stuff from the inside of the car and several hundred of them died from the effects after they were unloaded in Northern Arizona. The railroad declares the U. S. Government is to blame, having ordered the car treated with such a solution. What chance have I to recover from the railroad or the government?—R. D., Arizona.

The liability of the railroad company would depend upon whether or not they were negligent. In your case it seems to me that they were; even tho they had disinfected the cars with formaldehyde they could have done one of two things: Let the cars remain until the formaldehyde had worked off and killed the germs, or washed the car out after they had disinfected, and in our opinion the railroad company cannot use as a defense the fact that they were compelled to do this for the government. There would be no liability on the part of the government. We refer you to an interesting case cited recently in Texas of the M. K. & T. R. R. Co. vs. Cauble, 174 S. W. Reporter, page 880.

Removing Manure

I wish to know if I can legally take manure from the farm which I have rented as I am going to move January 1st. All material used for the production of this manure has been individual property. All field roughness and straw which has been fed to stock has been reserved in lease. Also a number of straw piles have been hauled from various places and put into these corrals for bedding.—L. B., Weld Co., Colo.

Assuming that all materials used in the production of this manure was individual property and was produced outside of the leased land, except as to the field roughness and straw, and assuming that that was reserved for the use of the lessee in the lease, then we advise that this manure belongs to the lessee and may be removed.

Partition Fence

There is 120 acres of land adjoining me. The owner has been gone for fifteen years. All the fence between the two places belongs to me and another man. He had it leased for five years but says he hasn't got it leased now and don't know where the man is that owns it, but says he has more right to the place than I do. Can he keep me from taking down half of the fence? I have written to the owner but can't get an answer.—W. C. H., Rye, Colo.

If this fence is a partition fence separating your land from the adjoining owner, and was erected as a partition fence, you should notify the owner of half of it in writing that you intend to remove your half of the fence. If the owner does not pay to you one-half of the value of the partition fence, within one year after receiving notice, you may then proceed to remove one-half of the fence, or that part which belongs to you. If the owner is a nonresident, you had better keep a copy of your letter, and send your letter to him by registered mail, so you will have proof that he received notice.

Insurance Premium

Can an old line insurance company collect what is known as the "short rate" in case a policy holder takes out a policy for five years with the fee payable annually in advance and he refuses to pay the second installment? If he gave a note covering the five installments, but the face of the policy declares plainly that same is null and void in case installments are not paid by a certain date, thus they claim money where no value is received. Can they collect the short rate, the whole note or any attorney or collection fees?—O. G. P., Weld Co., Colo.

If you have paid your first year's premium by the payment of the first installment of the note, and then surrender your policy before the second year begins, you will not have to pay the subsequent installment, where the policy provides that the policy is null and void in case the installments are not paid. Of course, as long as the insurance company has your note and you have their policy, the policy is good, so you ought to surrender your policy.

Division Fences

What is the law in Colorado regarding division fences? If one wants to survey and the other doesn't, can one compel the other to pay half the expense?—E. H. P., Elbert Co., Colo.

Your remedy is under Sec. 2591 of the Revised Statutes of Colorado, 1908. Under this statute it is provided that partition fences shall be erected and kept in repair at the joint cost of the owners of the respective adjoining enclosures. If due notice be given by either party and a reasonable length of time has elapsed, and the other party refuses to erect or repair, or cause to be erected or repaired one-half of said fence, the party giving notice may proceed to erect, or cause to be erected or repaired, the entire partition fence, and collect by law one-half the entire cost from the other party.

The law provides, however, that the land to be divided by partition fence shall be occupied for purposes requiring a fence. The law provides that any judgment obtained against the owner of any land for the value of such partition fence shall be a lien on the land to which said fence is appurtenant. A notice of the pendency of such action shall be filed as in other cases where lien is desired. The statute does not say anything about a survey for a line fence, so that we advise that if you build a line fence that we presume it would be up to you to put it on a proper line. Under the statute we doubt if you could make him pay for part of the survey, or any part of the survey. On the other hand, if you do not get the fence on a line, you could not compel him to pay for any part of it. It has been held by our courts that a line fence a few feet off from the line was not a line fence, and the other party could not be compelled to pay any part of it.

Not Subject to Contest

I have lived continuously on a 320-acre homestead for one year and complied with the law regarding improvements, cultivation, etc. I now have an opportunity to teach a nine-months school, but it is so far from my homestead that it will be necessary for me to be absent from home three or four nights each week during the entire term. Is such absence likely to cause the loss of the claim?—V. E. D., Fremont Co., Colo.

While your homestead would not be subject to contest on account of your absenting yourself from it three or four nights during each week for a period of nine months, yet you would not be complying with the homestead law, which requires a continuous residence of seven months during the year and it would be necessary in order to make final proof for you to live on your homestead nine months' additional time.

Just what you are looking for. See the Farmers' and Stockmen's Exchange, page 19.

Read This Before You Buy a Tractor

IF you could be **sure** you were getting the right tractor—a good reliable, economical machine—wouldn't you buy one for this Spring's work?

You have hesitated to choose from the many offered because you could not be **sure** that the tractor you bought would be the best one for you. That is the policy of a good business man.

The two claims made for most tractors are these—That the tractor will do your work and that it runs on kerosene. These two features are vital. They should be **guaranteed**, not merely **claimed**.

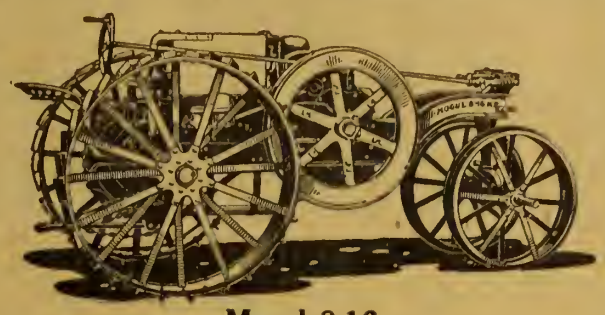
They are guaranteed in Mogul tractors.

Mogul tractors are **guaranteed to do good serviceable work** and to **operate successfully on kerosene.** The order blanks contain a warranty to that effect giving you the written guarantee of a responsible Company.

What better assurance than this can you get?

Buy a Mogul tractor—a tractor **built** to operate on kerosene; that **does** operate **successfully** on kerosene; that the Company **guarantees** to work on kerosene; **making that guarantee in the printed warranty** that you keep when you order.

Mogul 8-16 is without doubt the most popular and successful kerosene tractor on the market to-day, and no wonder. It has a simple, one-cylinder, slow speed, kerosene burning engine with crank case completely enclosed to keep out dirt. Hopper cooled. Starts and runs on magneto. Mechanical oiler takes care of all engine bearings. No gears to shift. Chain drive. Travels at correct plowing speed for section where sold. Turns in a 10-foot radius. Does all the heavy field work that horses are used for, and any belt work up to 16 H. P.



Mogul 8-16
Kerosene Tractor
$725 Cash f. o. b. Chicago

Because Mogul 8-16 is so popular, it is not always possible to make quick delivery. Now that the kerosene burning feature is guaranteed, sales will be still larger. Don't wait. Start now to investigate. Your order will have to be placed soon to insure delivery in time for the first good plowing days of Spring.

International Harvester Company of America
(Incorporated)
Crawford, Neb. Denver, Colo. Helena, Mont. Los Angeles, Cal.
Portland, Ore. San Francisco, Cal. Spokane, Wash. Salt Lake City, Utah

FREE TRIAL OFFER

A AND C CALF MEAL

Test It 30 Days at Our Expense

Let us prove that you can sell your milk for three or four times as much as Calf Meal costs, and turn your calf loss into a profit. Order 100 pounds through your dealer or direct. Use it 30 days. If you are not satisfied that it does what we claim, return unused portion and your money will be refunded. It costs less to feed than any other standard meal or home mixture. Contains all nutriment necessary to keep the calf in good condition. Promotes healthy growth of meat and bone. A little added to poultry mash will make chicks grow quicker and hens lay better. Call on your dealer or write today for free sample.

ADY & CROWE
1900 Fifteenth St. Denver, Colorado

NEW 1917 WESTERN HUNDREDS OF VALUABLE CROP SUGGESTIONS

SEED CATALOG FREE

A fine collection of carefully selected and successful varieties of Vegetable, Garden and Field Seeds, Grains and Grasses, Bulbs, Plants, Shrubs and Roses, that have always given satisfaction to Western Planters. We handle only best quality and give lowest prices. We make a specialty of Hardy Alfalfa Seed, World's Champion Marquis Wheat and Northern Grown Russian Oats that yield big crops. Send for our Catalog today. Sent only on request.

THE WESTERN SEED CO.
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$26.75 Buys 1½ H. P. Engine

Sold on 60-day trial. All styles and sizes up to 16 h. p. at big saving. Guaranteed. Send for catalog of Bargains for the farm. GENERAL MERCANTILE CO. Great Mail Order House. 727 S. 9th St., Omaha, Neb.

We pay highest prices for autographs of Statesmen, old books, Acts of Legislatures, Christian Science books, complete libraries. Send list.

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Pull Big Stumps by hand

Clear your stump land cheaply—no digging, no expense for teams and powder One man with a K can rip out any stump that can be pulled with the best inch steel cable.

Works by leverage—same principle as a jack. 100 pounds pull on the lever gives a 48-ton pull on the stump. Made of Krupp steel—guaranteed against breakage. Endorsed by U. S. Government experts.

Showing easy lever operation

HAND POWER **Stump Puller**

Write today for special offer and free booklet on Land Clearing.

Walter J. Fitzpatrick
Box 69
182 Fifth Street
San Francisco
California

Light Weight Cushman Engines

Built light, built right—for farmers who want an engine to do **many jobs in many places**, instead of one job in one place. Easy to move around. Very steady and quiet—no jumping, no loud or violent explosions, but smooth running. **Throttle Governed.** Schebler Carburetor. Friction clutch pulley. Runs at any speed.

4 H. P. Weighs Only 190 lbs.

Mounted on light truck, it may be pulled around by hand. Besides doing all regular farm work, it is the original and successful **Binder engine.** Saves a team and saves the crop. **8 H. P. only 320 lbs. Not cheap** but cheap in the long run. Engine Book free.

CUSHMAN MOTOR WORKS
894 N. 21st St., Lincoln, Nebr.

For All Farm Work
4 to 20 H.P.

Big Money in Running Water

Let us start you in a business that will make you from $15 to $50 a day when farm work is slack. Other men have done it for years with an

Improved Powers Combined Well Boring and Drilling Machine

One Man One Team

Same rig bores through any soil at rate of 100 ft. in 10 hours, and drills through rock. One team hauls and operates machine. Engine power if wanted. Easy to operate—no experts needed.

Small investment; easy terms. Make machine pay for itself in a few weeks work.

There is a big demand for wells to water stock and for irrigation.

Write for free illustrated circulars showing different styles.

Lisle Manufacturing Co.
Box 43 Clarinda, Iowa

UNITED STATES NATIONAL BANK

DENVER, COLO.

Operating under the Federal Reserve Act has established a

FARM LOAN DEPARTMENT
and CATTLE LOAN DEPARTMENT

Reasonable Rates offered farmers and stockmen without commissions

SELF-OILING WINDMILL

With INCLOSED MOTOR

Keeping OUT DUST and RAIN—Keeping IN OIL

DOUBLE GEARS - Each Carrying Half the Load

Every feature desirable in a windmill in the AUTO-OILED AERMOTOR

Write AERMOTOR CO.
2550 West 12th Street CHICAGO

Calf Shelter Built of Baled Straw

Calf Shelter Built of Baled Straw at Cost of $11.50

Too often winter catches some farmers unprepared to properly care for the livestock they have on hand. It often falls to the lot of the calf to be left suffering on the leeward side of the barn, or pushed off into a dark, drafty driveway, amidst the machinery, which was also thrown here for protection at the last minute. The calf is too valuable, and his future development depends too much on his attention at this time to be thus neglected. One of the common causes of calf scours is nothing but the cold, dark, ill-ventilated or drafty places where the calves are forced to stay.

It is not necessary to build an expensive place, as they are often not the best places. The above photo shows how Mr. A. D. Poor, living near Boulder, solved the problem of calf shelter. This house, built of baled straw, is fourteen feet square and is used to protect seven calves from the storm and cold nights. The total outlay in cash for this house was $11.50 for the material, which consisted of 71 bales, or practically two tons of straw, costing $4 to bale; 500 feet red roofing costing $6; 300 feet of chicken wire, costing $1.50. The lumber used for the doors, roof support and stanchions was all scraps. The inside is fitted with stanchions and lined around the bottom with scrap lumber, to keep the calves from eating the straw. Chicken wire would also do for this. The inside is warm, clean, and furnishes most comfortable quarters for winter protection.—H. H. Simpson, in Through the Leaves.

Farmers' Calls and Letters

Western Farm Life Service Bureau put a farmer in southeastern Colorado in touch with sources of pure seed of milo, kafir and feterita, and he expresses his appreciation in the following words: "Yours received. It is so unusual to have anyone take an interest in helping a farmer secure good seed, or anything in that line, that I must mention right now that your letter was appreciated. I am glad that that there is one farm journal that really means to help the farmer besides giving him ideas and opinions. While I am always ready to learn and try anything tending to improvement, yet after we have the information it doesn't amount to much unless we are put in touch with the goods."—A. E. PADDEN, Two Buttes, Colo.

We made a failure of getting strawberry plants to grow this year. We planted close to furrows and watered every eight or ten days. The ground would dry out so fast that but very few lived. We now have a piece of land that is sub-irrigated, or that is seeping some, that is very rich, being an old sheep lot. Good corn grew on the land this year. Now we are thinking of planting a good-sized patch of several kinds of berries on this good, rich sheep lot. We have harvested close of $8,000 worth of potatoes off twenty-three acres this year, and bought a good 80 acres for $7,000.—J. W. T., Olathe, Colo.

Eight thousand pounds of pinto beans were marketed in Denver the other day by B. J. Hensel of Strasburg, Colo., for which he received 7 cents a pound, f. o. b. Strasburg. His crop averaged 800 pounds an acre on dry land. He also marketed 900 bushels of wheat for which he got $2.75 per hundredweight. A few years ago Mr. Hensel homesteaded six miles south of Strasburg. He and his brother began virtually without capital, except their land. They have since bought additional land. The wheat and beans of 1916, a dry year, established them on a firm footing and they are provided with livestock which brings them a steady revenue. Strasburg is to have a co-operative creamery, ground being broken in December for the building, and some 1,600 cows have been signed up for a supply of cream. The farmers in that section are not letting their cash crops blind them to the fact that it takes livestock to maintain fertility and a constant income, and they are farming on the safe plan. "All we need in our neighborhood now is a farm loan association," said Mr. Hensel, "and we are talking it over and expect to form one soon, so that we can have long time loans thru government channels by next spring."

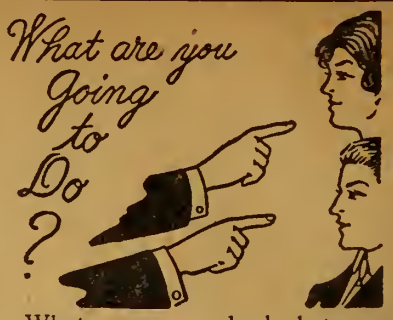
In your issue of November 15th "E. M. H." of Costilla County asks about pea-vine hay for horses. Prof. Morton seems to advise against it. My own experience was that my horse preferred pea-vine to any other hay, and I have never noticed any ill effects. The horse left only the larger stiff stems. Perhaps if E. M. H. will give his horses a chance they will give an opinion of their own. I want all the pea-vine hay I can get, and then some. The article by A. T. S. on the Pitkin County fair at Aspen did me good because I am an enthusiast on high altitude farming and have long wished that Western Farm Life would recognize its possibilities. There are hundreds of thousands of acres of cheap rough land from six to ten thousand feet that await the men who have vision to see and capital to develop their possibilities. There are several hardy farm products that reach a higher perfection of flavor at eight thousand feet than they will at five. Everyone knows the mountain potato—it sells everywhere at a premium. So does the mountain pea. Haven't you tasted Steamboat strawberries? Believe me, it's the same with every variety that will develop here. They reach a higher perfection at a higher altitude—naturally. As for stock, these heights are the correct place to raise calves, colts, lambs, shoats and babies. They all get an advantage in health, vigor, wind and limb that will last and benefit them all their days. Don't neglect the mountains in future.—GORDON KENT, Pinecliffe, Colo.

Swelling on Jaw

A milch cow has swelling the size of a goose egg on the under side of her lower jaw, near the end. It doesn't seem to be hard but resembles a swollen gland. The lump reached its present size in about two days and has remained the same size for about ten days.—E. K., Weld Co., Colo.

You should clip the hair closely and paint the affected parts with iodine. If pus seems to form, open from the under side so that it will drain thoroly.

What are you Going to Do?



What young people do between the ages of 16 and 25 practically decides their future success or failure. It is the ideal time to enter business.

There are splendid opportunities in business for trained young people at this time. Over 1600 office calls in 1916.

Write for particulars.

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The Bull Durham SILO

(The One-Man Silo)

(1) It is very durable.
(2) It is so easily built that any farmer and a boy helper can build one.
(3) It can be built a little at a time if occasion requires it.
(4) The material cost is low.
(5) All things considered it is the strongest and simplest and most lasting silo yet designed.

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Order Now — PROMPT DELIVERY

A tractor that has proved what it can do. It has been given the "acid test". Simple - Strong - Durable. It meets your every requirement. The most popular, low-priced, serviceable tractor on the market. Built up to a standard at a RIGHT PRICE. A tractor designed for years of service. Write for complete description and **Introductory Offer** to Dealers.

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1000 to 3000 Bushels

With one set of Letz Plates. Saving in cost of plates soon pays for a Letz Grinder. Self-sharpening, **silent running**, self-aligning. The grinder that will grind all grain and forage crops **fine as dust** in one grinding—even corn with husks, alfalfa and oat hulls. Make your own combination stock foods and save 50 per cent in feeding roughage. **10 days free trial**—you be the judge. Feed Book free.

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Send your next order for roofing to Omaha's fast growing mail order house. Save money and get quicker and better service. We sell direct at wholesale prices a full line of roofing, fencing, paints, etc. Get our new big FREE Book of Bargains, also 48-page Grocery List. Address

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Driver Agents Wanted

Ride in a Bush Car. Pay for it out of your commissions on sales, my agents are making money. Shipments are prompt. Bush Cars guaranteed or money back.

Five-Pass., 30 H. P. 32x3½ tires

Electric Starting 114-in. Wheelbase

Write at once for my 48-page catalog and all particulars. Address J. H. Bush, Pres. Dept. 1H

BUSH MOTOR COMPANY, Bush Temple, Chicago, Illinois

$15.00 Sweep Feed Grinder. | $19.00 Galvanized Steel Wind Mill.

We manufacture all sizes and styles. It will pay you to investigate. Write for catalog and price list.

CURRIE WIND MILL CO.,
Seventh St., Topeka, Kansas

Profit in Winter Dairying

The winter season should be the most profitable to the farmer-dairyman who has had the foresight to make the necessary preparations and who eliminates the middle man and deals direct with the manufacturer or consumer.

It is necessary in the first place to have good warm quarters, not necessarily a special dairy barn but a comfortable barn that is kept clean and sanitary and where the cows will keep warm. If the cow has to utilize a good portion of her feed keeping up the heat of her body, there is little left to be transformed into milk.

It is assumed that a practical farmer is not going to give special care and feed to a cow that will not give a good flow of milk in return, therefore it is necessary that he weed out the unprofitable cows, throw them out with the main bunch and give special attention to the good cows only.

At the present value of cows it is difficult to secure a good milk cow much under $150, but it would be far more profitable to dispose of some of the poor cows and purchase a few good ones. There is quite a difference in milking a cow that will barely pay for her feed and care and one that will give you a good profit.

Another important feature is the proper feeding. In order to get the best results from a cow, she should be fed as nearly as possible a balanced ration, which is the feed or combination of feeds furnishing the several nutrients in such proportion and amount as will properly and without excess of any nutrient, nourish a given animal for twenty-four hours.

Perhaps the cheapest and most available balanced ration for western dairy cows is composed of ensilage and alfalfa. This in connection with ground oats, barley, bran and oil cake for the better milkers, should bring out the best in the cows. In the absence of ensilage, some other succulent feed such as root crops may be used.

The marketing problem is one that is discouraging to many dairy farmers. While feed is so high, it is necessary for the farmer to get all the profits in his dairy products and to do this, he must eliminate the middle man and sell direct to the consumer or manufacturer.

Cow Testing Association

The first cow testing association to be formed in Colorado under the present administration of the state dairy commission, headed by Prof. George E. Morton of the Agricultural college, recently was organized in the Arkansas valley. A start was made with 600 cows, all Holsteins. The association has headquarters at Lamar and takes in dairy farmers at that point and Wiley, Holly, Bristol and Hartman. There are about 2,500 cows in the district supplying the condensary at Lamar with milk.

H. C. Nevius, field man for the dairy commission, was instrumental in getting the dairymen together in an association. A man has been employed to do the testing and the farmers will thus learn which of the cows are earning their keep and making them a profit, and proceed to turn the unprofitable ones over to the butcher.

The officers of the association are E. J. Wagner, president; Mr. Leonard, vice president; Carl Hasty, secretary-treasurer; J. M. Williams and E. P. Gilbert, directors.

The Dual Purpose Cow

Western Farm Life:

There seems to be a great deal of comment on the so-called "dual-purpose cow," and it seems that there is no way of settling the question.

In my judgment, there is no such thing as a dual-purpose cow. If perchance we do pick up a cow of the recognized beef type that is a butter producer, which may be termed a dual-purpose cow, what per cent of her offspring would be butter producers? A very small per cent, I dare say. If one breeds for butter how long would cattle remain of the beef type? This is easily proven from the fact that our dairy breeds, such as Holstein, Guernsey, Jersey and Ayrshire, are far from beef animals. Why? Because they have been bred for generations for milk and butter production.

A strictly beef animal must be born with the lean meat on him. Compare a Holstein calf a day old with a Hereford of the same age, and one does not have to be an expert to see at a glance the vast difference in their conformation. That difference will remain so just as long as they live. You may feed this Holstein and Hereford to maturity, slaughter, hang their carcasses on the hooks and ninety-nine men out of a hundred that have had any experience at all in buying and dressing beef can distinguish the difference between the two.

There is a greater difference when it comes to retailing the meat off the block. The beef type animal will be well marbled, with fat all thru the lean, whereas the dairy animal will be all fat and all lean. In other words, the dairy carcass will have none of the fat with the lean, and by far the larger per cent of fat will be on the outer and inner sides.

Dairy cattle can be marketed profitably only in the following way—i. e., by vealing from 30 to 40 days old, or fed and sold as baby beef at 18 or 20 months old. A good dairy cow will earn $40 to $50 more every year than an average so-called dual-purpose cow.

Say she is a producer for six years. This means $240 to $300. At the end of this period sell your dual cow for $50 and throw away your dairy cow or chloroform her and give her a decent burial, and you have from $190 to $250 to her credit over and above the amount you have received from the dual-purpose animal.

Do you hear of the dual-purpose cow in the great dairy districts of the world? I venture to say no. My advice to one starting farming or in live stock is to specialize, and especially with live stock. This dual-purpose never has been and never will be, and the longer the world stands the further we get away from it.—John Hays, Pilot, Wyo.

Dairy Notes

Clean milk is obtained only by a clean dairyman.

Raise calves on clean, warm, sweet skim-milk, fed regularly.

No farmer with a dozen good dairy cows can afford to be without a pure bred dairy sire.

The silo, cream separator and the manure spreader are indispensables to the successful dairy farmer.

The quantity of milk that a cow gives does not always determine her value. The cost of production is a factor that must be considered. Some cows give twice the quantity of milk on the same amount of feed.

Twenty-one thousand five hundred dollars was paid for Finderne Mutual Fayne Valdessa, a Holstein yearling bull calf, recently at the Pacific International Show at Portland, Ore. The calf was consigned by Bernard Meyer of Finderne, New Jersey, and bought by John Von Herberg for his dairy ranch at Kent, Wash.

Kerosene oil will kill red mites in poultry houses. Apply with small sprayer.

Wood Churns Unsanitary

Send for our literature on our new steel churns. Absolutely sanitary, easy to clean, made of seamless heavy steel; will last a lifetime.

BEATRICE CREAMERY CO.

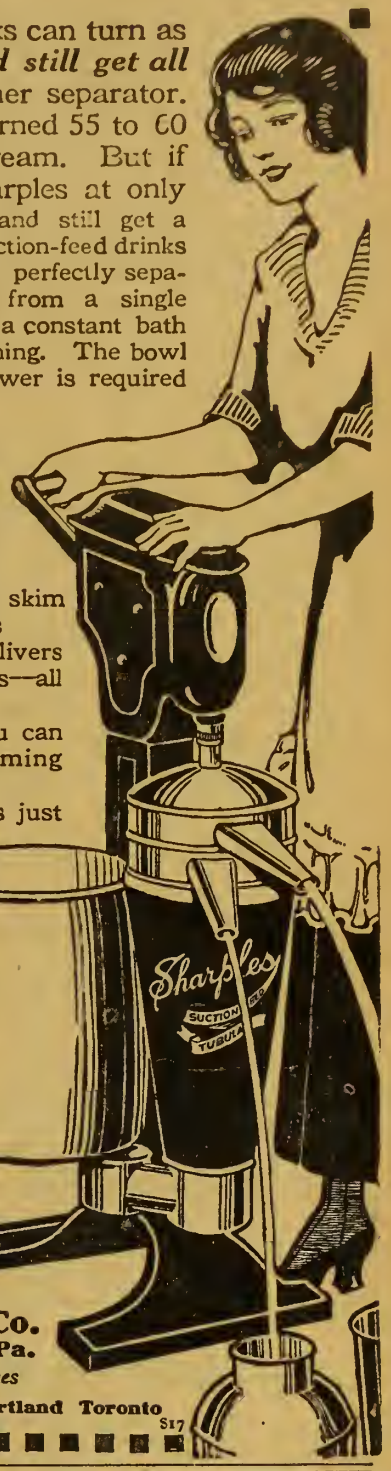
Dept. 10, Denver, Colo.

OVERLAND ALUMINUM SHOES

Sizes 1 to 13 Heights 6 to 17 in. **Save Money and Prevent Sickness** Water-Proof, Rust-Proof, Rot-Proof. Warm in winter, cool in summer. Weight about the same as an all-leather work shoe. Will outwear several pairs of leather, rubber or wood soled shoes. No metal touches you. Thick felt insole. Comfortable to wear. Keep the feet in good condition. Best by test for all work in any weather. MONEY BACK if shoes do not meet with your approval. Write for FREE catalog which shows styles, gives prices and tells how to order. A postal brings it.

OVERLAND SHOE CO. Dept. 52a Racine, Wis

Easy to Turn-Why?



BECAUSE the women-folks can turn as slow as they please, *and still get all the cream!*—true of no other separator. Most separators have to be turned 55 to 60 turns a minute or they lose cream. But if you want, you can turn a Sharples at only 38 or 40 revolutions per minute and still get a perfect skim—for the wonderful Suction-feed drinks up the milk only as fast as it can perfectly separate it. Again, the bowl hangs from a single frictionless ball-bearing running in a constant bath of oil. That, too, means easy turning. The bowl has no heavy discs in it—little power is required to set it spinning.

SHARPLES SUCTION-FEED CREAM SEPARATOR

—is the *only* separator that will skim clean at widely-varying speeds
—is the *only* separator that delivers cream of unchanging thickness—all speeds
—is the *only* separator that you can turn faster and finish skimming quicker
—is the *only* separator that has just *one* piece in the bowl—no discs, easy to clean
—is the *only* separator with knee-low supply tank and a once-a-month oiling system

Made and strongly guaranteed by the largest and oldest separator factory in America. Repair cost is practically nothing—so ruggedly built that many a Sharples has not cost one dollar for repairs in fifteen years. Over a million users—in every dairying country of the world. Send for catalog to Dept. 30.

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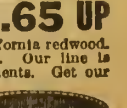

Farm Woman and the Home

A useful body and an alert mind are largely the factors of the problem of proper feeding. The mother who wants to make the best citizen out of her child should feed it properly. In order to do this she should know what kind of food to feed, how much to feed, and how often to feed. Children need more food in proportion to their size than adults, and it is therefore wise to give more than three meals a day; on the other hand, food must not be given so often that the stomach will have no time to rest. This can be avoided if children are fed at the same hour every day. The digestive organs of children are not strong enough to care for the hearty foods of adults; therefore their food should not be so strong.

It is important that children be taught the chewing habit. For this purpose crusts of bread and crisped crackers are introduced when the child has several teeth. Cereals, preferably from whole grains, should be a part of every day's food. Long cooking (three or four hours) is necessary for breakfast cereals. They should be served with top milk and no sugar. The drinking of a liberal amount of water is necessary to the health of the child. Several glasses a day should be taken, preferably between meals, for if water is taking during meals the food is "washed down" before being sufficiently chewed. Candy, always the purest, or loaf sugar, may be fed sparingly at meals, but never between meals, for that spoils the natural appetite.

Soft cooked (never fried) eggs should always be a part of the child's diet. Serving eggs in custards or in soups gives variety. One egg a day is sufficient for the child. Since fruit and fresh vegetables are rich in minerals, so important in bone and muscle building, they should be fed to children. For the younger children begin with the mild flavored vegetables well cooked and rubbed thru a sieve. Any mild fresh fruit in perfect condition, may be used for the older children. The sweet fruits should be cooked and served without sugar.

Provide plenty of bread and butter. The milk and eggs given to younger children take the place of meat. After the age of eight years children may be fed meats with little fat such as broiled beefsteak, stewed chicken, baked haddock, halibut or cod, roast beef or mutton. The following foods should be avoided with children until after the tenth year: Ham, bacon, sausage, pork, fried food of any kind, hot bread, fresh rolls, pastry, all rich cakes, syrups, preserves, nuts, tea, coffee, lemonade, soda water, raw vegetables such as cucumbers, onions, radishes, celery and the following cooked vegetables: Corn, cabbage and lima beans.—A. Grace Johnson, Oregon Agricultural College.

Farmers' Home Reading Course

Training for efficiency in community service is announced as the chief object of Home Reading and Correspondence Courses in Rural Betterment, inaugurated by Colorado Agricultural college. Those interested are urged to apply to C. G. Sargent, Professor of Rural Education, Fort Collins, for free copy of catalogue describing the course, which is to be conducted by the department of rural and industrial education. The announcement reads, in part, as follows:

"These courses are especially adapted to students and teachers who are training themselves for rural leadership, also for farmers' study clubs, grange reading circles, and for fireside reading circles, in which parents and older children in the home may participate. One course is especially intended for leaders of boys' and girls' clubs."

No charge will be made for help in organizing and conducting classes where the courses are taken for self-improvement. However, they may also be taken for college credits toward a degree, in which event a fee of $1 per credit will be charged at the time the examination is taken. Such examination will usually be held at the office of a county school superintendent or county agriculturist.

Books and bulletins to be studied must be ordered from the publishers whose addresses are given in the catalogue, thru local dealers or directly. The subjects include: rural education, rural leadership, rural organization, the rural church, rural economics, rural sociology, agriculture, dairying, poultry raising, farm management, home improvement. Every department of country life is provided for.

Defense of Kansas Plan

In a recent issue of Western Farm Life appeared an editorial criticising a method adopted by Kansas State Agricultural college for making permanent record of the characteristics of its students by a categorical listing of their shortcomings as well as their good points. Dr. J. T. Willard, dean of the division of general science, makes reply to that editorial, and, presumably, sets forth the attitude of Kansas' faculty in regard to a matter deemed by Western Farm Life to be an infringement upon individual rights.

There was no assumption on our part of "the absence of common sense" in the instructor, for, no matter how judiciously such a system of character reading and recording is handled, the chances of injustice to the student now and in future far outweigh any good that might come to him thru "intelligent assistance." It is not the motive behind it, but the system itself that is wrong. We have no desire for controversy on the subject, our only object in recording disapproval being to bring the matter to the attention of our farmer friends in these mountain states, so that they would be prepared in case the plan comes up for consideration by the authorities of any of the agricultural colleges in this region. Dr. Willard's defense of it follows:

It seems to me that the writer of the criticism has completely misinterpreted the attitude of our college authorities, and in fact the teachers in general. He seems to imply that our main purpose would be to ascertain and record all of the weaknesses of the students in our charge and that we are wholly ignorant of the fact that men and women develop while in college and after leaving college. He seems to assume the absence of ordinary common sense in the make-up of our college teachers.

The purpose of recording the estimate made by each teacher with whom each of our students has worked is to provide a basis for intelligent assistance in every proper way to these students. These records of judgment are simply such as everyone must formally or informally make concerning persons with whom he comes in contact, and no one is employed in any position without reference to at least a part of these characteristics. The characteristics that will be of dominant importance vary with the position which one is seeking. Hence it is necessary to have knowledge covering a fairly wide range of characteristics. If one of our graduates should apply for a position with Western Farm Life by sending a typewritten letter accompanied by a statement of his grades in the subjects pursued at the Kansas State Agricultural college, I suspect that he would not be very seriously considered. Certainly he would not he employed until in some way Western Farm Life had found out a great deal more about him than those grades would show. If this application were presented shortly after the young man's graduation there would doubtless be several people at the college who could write intelligently concerning characteristics upon which Western Farm Life might wish information. If, however, this request came several years after the student's graduation the men who knew him best might he no longer connected with the institution, and the young man might suffer a serious handicap or at best very great inconvenience on that account. The preparation of a permanent record for filing is to enable us to make use of the judgment of men who personally knew the students, even though the occasion for such use might be many years later than graduation.

Of course, the student's development and experience after graduation comes into account, and we always use any knowledge that we have in writing concerning our students, and any testimonial would naturally include with it a statement of the basis for the writer's judgment. I believe that it is the natural tendency of college

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presidents and deans to whom such inquiries must frequently come, and to heads of departments and others who are often called upon for such testimonials, to make as favorable a presentation for the former student as possible. We hope that the records which we may accumulate will enable us to assist our students more effectively than in the past. It is no real favor to a man to recommend him for a position for which he is not fitted, and hence it is important to have data concerning his weak points as well as strong ones.

The writer of the editorial seems to proceed on the supposition that this is an experiment in psychology. The fact is that it was not suggested by our psychologists, but by practical business men to meet a real need. It is an adaptation of methods which are followed by some of the largest corporations employing men. There is no inquisition and no discourtesy or embarrassment to the students involved. We design simply to record the ordinary judgmen of men and women upon men and women, judgments which every one is making constantly. We also hope that in requiring these reports from the teachers we will thereby lead them to observe more carefully the characteristics of their students and hence to become able to assist them more effectively in their college work. The plan is new as applied to the whole institution, but has been in use in the Division of Engineering for over two years.

J. T. WILLARD.

OUR PATTERN DEPARTMENT

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We can supply our readers with high-grade perfect-fitting, seam-allowing patterns at 10c each, postpaid. Full directions for making, as well as the amount of material required, accompany each pattern. When ordering, write your name and address plainly, tell us the correct number and size of each pattern you want. We agree to fill all orders promptly and guarantee safe delivery. Address all orders to WESTERN FARM LIFE, Pattern Department, 14th and Arapahoe, Denver, Colo.

1931—Smart Frock for Party or Best Wear. Cut in sizes 6, 8, 10, 12 and 14 years. Requires 3 yards 27-inch material for dress and 1 yard for bolero for 8-year size. This attractive little style is good for batiste, lawn, crepe, crepe de chine, nun's veiling, challie, messaline or taffeta. The bolero is finished separately. The skirt is full and gathered at the waistline. The sleeves may be in wrist or in elbow length.

1927—Smart Little Dress for Mother's Girl. Cut in sizes 2, 4, 6 and 8 years. Requires 3¼ yards 27-inch material for 4-year size, with ¾-yard for bolero. In batiste, chiffon, crepe, net and other soft fabrics, this model will be very

appropriate. The waist is finished in Empire style and the bolero and collar may be omitted. In wrist length the sleeve is finished with a heading. In elbow length, a smart and jaunty cuff forms a neat trimming.

1915—A Popular Style. Cut in sizes small, medium and large. Requires 4⅛ yards 36-inch material. This model is good for drill, denim, sateen, lawn, batiste, cambric, seersucker, gingham and muslin. It is cool and comfortable, and its fullness may be confined at the waistline, under the belt.

1929—A Charming Negligee. Cut in sizes 34, 38, 42, 44 and 46 inches bust measure. Requires 7⅛ yards 36-inch material for 38-inch size. Silk crepe in blue and white, with trimming of blue satin was used for this model. Cotton crepe is equally attractive and pretty, as are also lawn, dimity, dotted Swiss and other lingerie fabrics. For warmth, flannel, flannelette, cashmere or albatross would be good. The fronts fall in graceful folds below the deep collar. The fullness may be confined by the belt, or shirred to fit an inside band. In soft materials, the shirring would be very pretty.

1472—Stylish, Up-to-Date Model. Cut in sizes 4, 6, 8 and 10 years. Requires 3 yards 36-inch material for 6-year size. For this model striped galatea was used in blue and white, with white repp for trimming. The dress is a one-piece design, with belt stitched to position. The fronts may be slashed and finished with eyelets for laced closing, or this closing may be simulated.

1918—Comfortable Play Dress. Cut in sizes 2, 4 and 6 years. Requires 3 yards 36-inch material for 4-year size. Gingham, chambrey, drill, galatea, flannelette and serge are good for this style. The pattern is composed of a waist and bloomers which may be joined to the waist or buttoned on separately.

1628—Ladies' Corset Cover and Drawers. Cut in sizes small, medium and large. Requires 3½ yards for medium size in 36 inch material. A popular, easily and quickly made corset cover is here shown, which combines nicely with the

comfortable and equally simple style of drawers. The models are good for lawn, batiste, all-over embroidery, dimity, crepe and silk. The drawers are cut without fullness at the waistline, and are lengthened by a ruffle that may be of lace or embroidery or of the same material as the body portions.

An Attractive Dress for Many Occasions. 1942—Waist. 1943—Skirt. The waist is cut in sizes 34, 36, 38, 40, 42 and 44 inches bust measure. The skirt is cut in sizes 22, 24, 26, 28, 30 and 32 inches waist measure. Requires 6¾ yards 44-inch material for medium size. For business or morning wear there is no style more to be recommended than the "tailored" dress. In the model here illustrated we have good lines and new style features. The waist has added yoke facings. The skirt is made with plaits at the side front and a smart pocket trimming. The yoke facings and pocket trimmings may be omitted.

Anti-Freeze For Autos

To the farmer, isolated in many instances from mechanics or garages, the problems connected with operating an automobile during the winter months present many conflicting angles. Cold weather, as a rule, drops down over night and finds many car owners with frozen radiators and a silent motor.

As a simple matter of preparedness, the rural car owner should make a considerable quantity of anti-freeze solution for himself to keep on hand for the cold spell. We all know that freezing results in cracked cylinders, split radiator tubes and a big repair bill. The anti-freeze solution is therefore the cheaper remedy in the long run.

Before placing the solution in the radiator, it is a good plan to thoroly flush out the system. We recommend to our owners the following solutions for various degrees of severe weather. For zero weather: 3 quarts of glycerine, 2 gallons of alcohol, 4 gallons of water. For 5 below zero: 1 gallon of glycerine, 1 gallon of alcohol, 4¾ gallons of water. For 30 below zero: 9 pints of glycerine, 9 pints of alcohol, 4½ gallons of water. We do not suggest the use of alcohol and water without glycerine as alcohol will evaporate too readily at the temperature of 180 degrees. Never under any circumstances use calcium chloride.—H. W. Miller, Service Manager Chalmers Motor Co.

Cottonseed and Oil Cake

Please tell me all you can about feeding cattle cotton seed cake with hay and without. Is there any difference in cotton seed cake and oil cake? I have lots of good pasture and several straw piles. Do you know anything about straw being fed as roughness with cotton seed cake or linseed oil cake? What is the difference in price?—C. L., Wyoming.

Prices are about the same on both and the protein constituents are about the same in both, but they should be fed under these conditions: if your other feed consists of hay, fodder or other roughage, it would be well to feed oil cake, as it is a laxative. If your feed consists of ensilage or something of a laxative nature, it would be well to feed the cottonseed cake, as it has the opposite effect on the system of animals. Under your conditions I would recommend oil cake.

Good oat straw makes a fair roughage for cattle that have other feed. You could not expect to take cattle thru a winter on straw and pasture and bring them out in fair condition. You should have some carbonaceous feeds as well as feeds containing protein.

Year's Record of Colorado Boys and Girls' Clubs

Continued from Page 5

$1.38; average net profit, $7.69.
$1.38; average net profit, $7.69.

Pork Production Results

Total enrolled, 277; tital number completing, 88. Animals managed, 107; pounds of pork produced by members, 14,124; value of pork produced, $1,129.92; cost of production, $635.58; net profit, $494.34. Average number of units, 1.2; average cost per pound, 4½c; average net profit, 4c.

Sewing and Cooking

In sewing clubs the girls made 1,974 articles, chiefly for wear and in cooking. The girls cooked about 9,200 dishes for the table.

When taking sheets, spreads or other large pieces from the line fold over in the direction of the line until of convenient width to handle easily.

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Denver, Colorado

	1913	1914	1915
ADMITTED ASSETS	$255,960.29	$649,128.22	$876,270.02
LIABILITIES			
Policy Reserves and Other Liabilities	$ 5,848.97	$124,695.31	$288,930.26
Capital Stock	117,648.00	219,900.00	254,756.00
Surplus	132,463.32	304,532.91	332,583.77
Total Liabilities	$255,960.29	$649,128.22	$876,270.02

Next annual statement will show assets of more than $2,500,000, with $17,000,000 insurance in force

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Here is a wonderful new pea especially suited to home gardens. Excellent for market gardening. Matures early. Vines grow 15 to 18 inches high, luxuriantly. Pods dark green, run in pairs, fair sized, extra fine flavor. A 10c package free to you if you will distribute 6 advertising post cards among your friends. Offer is made to make more widely known Lincoln Brand Seeds (the new trade name for the well-known Griswold Quality Seeds). Or, enclose 10 cents for mailing expense and we will send also 1 ten cent package each of John Baer Tomato, Delicious Gold Lined Muskmelon, Aristocrat Seed Corn, Four big packages in all, and a copy of our new, big Seed Annual free.

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Dept. C-151 Lincoln, Neb.

Live Items About Live Stock

The 23,000-acre ranch of the Wyoming Hereford Association of Cheyenne, Wyo., including the 1,100 head of registered Herefords, was recently sold to James D. and Raymond S. Husted of Denver for $400,000. This is one of the largest registered Hereford herds in the world and one of the oldest ranches. It was founded in the early eighties and was largely financed in Scotland. The foundation herd came from England and consisted of the best blood to be had.

The standard of this fine herd has constantly been raised through the importation of new blood from the old country. Among the noted animals imported by the Wyoming Hereford Association was Rudolph, by The Grove 3d. For many years this noted herd has been strongly bred in the blood of the Gudgell & Simpson Anxiety 4th family. All the bulls heading the herd have been selected because of their individuality and their close relation to the fountainhead of Hereford merit.

The new owners of this herd are well known Western cattle breeders who have been in the pure-bred business for a good many years.

Herds of Wild Horses

Small bands of wild horses range in the desolate strips of territory in the bad lands and the rough mountain ranges of Western Moffat county, says the Steamboat Pilot. Some of these animals bear the brands of various stock outfits, and at one time were saddle horses, while others, well along the path to old age, have never felt the touch of rope or branding iron. While there are individuals known as "wild horse runners," who make a business o fcapturing these horses, it is said that, as a rule, two good horses are lost where one wild horse is captured, owing to the rough country traversed in the chase and the terrific battle which these horses put up in the capture.

California's Champion Herd

A herd of 80 cows with an average production of 427.18 lbs. butterfat is the remarkable record hung up by John Hanson's herd of grade Jerseys in the Ferndale Cow Testing Association's tests for the year of 1915.

This is a noteworthy average and as it is generally stated that a cow should produce 150 lbs. butterfat in a year to pay her keep it is quite evident that this herd is a long way from being in the "boarder" class.

That Mr. Hanson is a progressive breeder and a firm believer in pure-bred sires is evidenced by the fact that pure-bred Jersey bulls have been used continuously for thirty years at the home of this record herd in Modesto, California.

GRANGE NEWS

Rudolph Johnson, State Secretary

Harmony Grange, No. 211, will organize a juvenile grange January 20.

Genesee Grange, No. 219, is preparing a contest of programs. They have just paid for a new floor in their hall and have sent for new tables for each station.

Sunflower Grange, No. 162, has held two meetings a month with a fair attendance. They have bought two cars of coal this month and expect more soon. They did very well on them.

Simpson Grange, No. 238, held election of officers December 9, with a good attendance, Master, P. Wallich; lecturer, Golda Staddard; secretary, John Kemper. They are making plans for a series of five meetings this winter.

Arlington Grange, No. 250, held an election of officers December 24, followed by a program and treat. January 1 they installed officers and had a dinner for everyone. They are preparing a play to give in the near future.

Tri-County Grange, No. 264, at their last meeting had a big fed at noon, followed by a lively discussion in regard to a proposed creamery to be located at Haswell by a Chicago firm who are asking the farmers to sign up 1,600 cows and furnish eighty acres of land for the creamery. Alvin T. Steinel of Western Farm Life gave us a very interesting talk on the federal farm loan act. A committee has been appointed to arrange for our annual rabbit hunt. We are expecting our county agricultural agent, P. N. Flint, to be with us not later than our January meeting. We have just bought three cars of hay and are trying to make up a car of oil.

Mountain View Grange, No. 272, held two regular meetings in December with one special meeting. They had initiation, followed by a harvest feast. At one meeting they held election of officers and gave a comedy drama in one act. Next meeting will be reading of the constitution and by-laws on the subject "What the Grange Means," by a few members, and a lecture on the same subject by the master. They have placed a traveling library in the school house for the good of the community. They are buying coal with Orchard Park Grange.

Golden Rule Grange, No. 287, held hree meetings in December with a good attendance.

Clear Creek Valley Grange, No. 4, celebrated the Golden Jubilee of the grange by a program and oyster supper on December 8, 1916. Being the oldest grange in the state, much attention was given to the history of the national and local grange on the program. On December 15 the annual election of officers was held and the installation of officers took place on January 5. The lecturer of this grange, who is John Meier of Arvada, Colo., would like to hear from other lecturers about their work.

A writer in the Pueblo Chieftain, date of December 4, 1916, deplores the backward condition of the farmers in Pueblo county, their lack of progressiveness, of public spirit, of co-operation, etc., and among other things states that "there are no Granges in Pueblo county." This is an error, for within the past year three Granges have been organized in that county—one at Pinon, and two near Boone. This is a start toward the bettering of the situation shown to exist there.

Two new Granges have been organized in La Plata county, in the southwest corner of the state; Florida Grange at Griffith, and Rim Cone Valley Grange at Ignacio. This makes four Granges in the county.

A meeting of the legislative committee of the Colorado State Grange will be held in the near future to consider a suitable herd law. It is probable that conferences will be held with other organizations in an effort to agree on some law to restrain free grazing, as a very insistent demand is found in some parts of the state for such laws, and several bills to that effect will be introduced at the coming session of the legislature.

Epworth Grange, No. 275, held a very successful meeting on November 23. A class of twelve was found waiting and duly instructed in the mysteries of the order. Thirty-two visiting members from Lakeside grange were present. After the business of the evening was disposed of, oysters were served. The local attendance was 119. Our grange has bought three cars of coal and one car of apples at a saving of 75 per cent. Lots of work in sight for this winter in the way of new members.

Best wishes to all granges for a prosperous 1917.

Resolutions

Whereas, God in His providence has seen fit to remove from our midst our brother, A. M. Gassert, therefore be it

Resolved by the Central Valley Grange, No. 200, that we extend to Mrs. Gassert and family our most heartfelt sympathy.

J. W. WEST,
R. R. SKINNER,
A. W. COLLINS,
Committee.

Duroc Jersey Boars We have a few choice Duroc Jersey boars, this spring pigs, for sale. Registered, guaranteed immune from Cholera. Acclimated, Colorado raised. Prices to sell. Write for full particulars.

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One 2-year-old registered Jack and two yearling Jacks; all big, heavy-boned. One 2-year-old registered Percheron stallion. One Belgian stallion, grade. One standard-bred stallion. Colorado raised and acclimated

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Valentine's Last, X12316; 452005 at head of beef herd. Claywood White, 427350 at head of milk type.

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POLAND CHINA HOGS Eleck Baldwin's Western Nebraska Herd of big, smooth Poland China Hogs; 10 head of March and April Boars for sale. These are the tops of my spring litters. They are cholera immune and are priced to sell.

ELECK BALDWIN, Dickens, Nebr.

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We have seventy-five as good young Percheron Stallions as can be found any place in the United States and we sell them at very reasonable prices. If you want a Stallion see what we have to offer. We have seventy-five good young mares and fillies for sale also.

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Why not start in the poultry BUSINESS? Invoice now and twelve months from now. Count the cost and keep a record of all poultry and eggs consumed and sold. Let the boys and girls in on the bookkeeping. It's good education.

Cabbage and root vegetables of all kinds will lessen the cost of feeding, tone up the fowls and hurry up the eggs. Silage and beet pulp are mighty good, too.

Read the incubator catalogs and order your machine NOW. You have failed once more in getting in on the 50c egg game but you need not fail again. The ONLY way to get in is to HATCH IN SEASON. The March and April hatched pullet, if cared for properly, WILL DO THE BUSINESS.

Feed regularly, a variety. Don't forget a wet, warm mash every day and the eggs will come more regularly from now on.

Keep down the dust in the hen house and do not forget lots of clean straw.

Show time is on. Do not fail to attend at least one poultry show. It is a good place to find breeding stock, a good place to learn things, a good place to meet the people who are doing a good work. But do not buy a fowl just because of a beautiful comb or perfect plumage, if you are in the business of supplying the market with eggs and dressed fowls. Choose for action and vigor. The fancier often knows no better than to sell his very best stock from the standpoint of production and stamina, because of some color or other disqualification, and the farmer does not need to buy fancy points to FILL THE EGG BASKET.

The final culling should take place NOW. The remaining runts, useless cockerels, great grandmother hens, should go to market now to save feed.

Poultry Manure

The manure produced is a valuable by-product of poultry raising. It is estimated that the average night droppings of a hen amount to 30 to 40 pounds a year. This represents the manure which can certainly be saved with the exercise of a little care. A conservative estimate indicates that this manure contains fertilizing constituents which would cost 20 to 25 cents if bought in the form of commercial fertilizers at ordinary prices. A flock of 100 hens would at this rate produce manure worth $20 to $25 per year. If, however, the manure is not properly cared for, as much as one-half of its mertilizing value is likely to be lost.

Sifted coal ashes may be used as an absorbent, but wood ashes or lime should not be mixed with the manure, as they are likely to cause the loss of its most valuable fertilizing constituent, namely, nitrogen ammonia . Occasionally the litter from the poultry house may be mixed with the manure. This increases the bulk, but greatly reduces the value per pound of the manure and makes it difficult to apply to the soil, except where it is to be broadcasted and plowed in.

Poultry manure is particularly well adapted to gardening, and poultry raisers should either use it on their own garden or dispose of it at a good price, thus increasing the profits of their flocks.

Older Stock for Breeding

I have some 3-year-old hens and some April hatched pullets. Which is the best to breed from? All Leghorn chickens. What age roosters should be used for 3-year-old hens? What age roosters for April hatched pullets? Could you refer me to some reliable firm for good stock White Leghorn roosters?—L. J. K., Rincon, N. Mex.

Generally the older stock is better for breeding purposes than the younger stock. This is true not only because of the difference in age, but in the case of hens and pullets, because the pullets often lay heavily during the winter months and so are not as strong physically as the hens which have laid little or none before hatching time. If the young stock is well developed and vigorous and if the pullets have not been laying heavily during the winter, they will probably bring as good chicks as the older hens. Select the breeding stock because of individual quality, size, vigor and action, being careful to weed out those that are immature or those that show any signs of weakness.

Getting Rid of Lice

I would like to know how to get rid of chicken lice. What methods do you advise? We have old log hen houses with straw and willow roof. Is blue ointment good to kill lice and how do you use it? At what time should mash be fed?—G. F. H., Idaho.

Blue ointment salve is highly recommended as a lice killer. The method of using it is to apply a very small amount, not a larger quantity than the size of a small pea, to the fowl's body below the vent, rubbing in thoroughly. Blue ointment salve is poisonous and dangerous to use in large quantities. Mites are usually hard to control in such a house as you describe, as they find so many secure hiding places during the day. Mites are blood-suckers and must be gone after much the same as bedbugs, because their habits are similar. A 5 per cent or 10 per cent solution of zenoleum, sheep dip or whitewash will kill them if it can be made to TOUCH them. Probably the only way to make a thorough job of a straw house is to burn the straw, saturate the framework with "dope" and put on new straw.

The time of feeding a mash is immaterial. We prefer the noon meal to be of mash, but formerly had as good results when we fed in the morning. Some feed in the evening, but the time is largely a matter of convenience.

Incubators and Breeders

I intend to go into the poultry business on a large scale; would you kindly advise me as to what kind of incubator and brooder you would advise? Also what kind of poultry would you advise, both for laying purposes, also for meat purposes, and the largest size and quickest growth? Could you advise me also where I could purchase such chickens as would be appropriate for my business?—R. W., Idaho.

Any one of a dozen or more makes of incubators would probably give you perfect satisfaction. I would suggest that you get a number of catalogs, visit such of your neighbors who have been using incubators, write to your state agricultural college at Moscow, then buy the one which is proving good in your community. To meet your requirements for a medium to large fowl, quick growing, for both eggs and meat, the American class, consisting of the Plymouth Rocks, Wyandottes and Rhode Island Reds, would probably be best choice. You cannot fail in your selection by choosing any of these.

Probably Not Blackhead

I have a young turkey that I raised with the idea of acclimating him to head a flock. I can't buy stock raised here and the altitude of 8,500 feet makes it necessary to acclimate poultry. He did well up to two weeks ago, when he got up one morning feeling seedy. He moped and refused to eat. Diarrhea set in and continued till a day or two ago. After he had fasted three full days I told my wife I was going to cut his head off. However, we decided to doctor him. We kept him in a box in the kitchen, fed him bread and milk with a spoon, dosed him with Jamaica ginger, diluted, and small quantities of castor oil. He has wasted to a shadow, but is eating heartily and takes considerable interest in life once more. Now, provided he survives and seems vigorous in the spring, is there any reason why I need be afraid to mate him? Did he have blackhead?—G. K., Inecliffe, Colo.

If your turkey was strong and vigorous before being taken sick, it will be perfectly safe to use him if he **fully recovers,** that is, if he shows his former vigor and activity. Because of a severe attack of illness a person may be none the worse after recovery; neither does such an illness prove that a person is diseased permanently. Probably the trouble was not blackhead, but it is impossible to decide that from your description.

Definition of Crow-Heads

Will Prof. Vapion kindly explain thru Western Farm Life what he means by "crow-heads?" In my experience with poultry I find that in every flock raised there are always some that lack vigor and spend most of their time at the feed hopper. These are known locally as "mash-eaters." Would the two terms by synonymous? —J. F. H., Jefferson Co., Colo.

The term "crow-head" may not be a legitimate term and may be a slam at the crow. Certainly it is not scientific, but to me it explains the condition of the fowl with a long, narrow, flat head. This condition denotes a weak constitu-

Continued on Page 19

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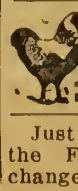

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Just what you are looking for. See the Farmers' and Stockmen's Exchange, page 19.

With the County Agriculturist

ITEMS OF INTEREST FROM THE FIRING LINE

COLORADO'S list of county agriculturists includes four who answer to the name of Smith. They are often called the Farm-Smiths of Colorado. There is Smith of Las Animas, Smith of Adams, Smith of the San Juan basin and Smith of Pueblo. So efficient are these Smiths that it is said it is now a distinct recommendation for a man who applies for county agent work in Colorado to bear the Smith name. This merely goes to show that these four Smiths are

Stanley V. Smith

keeping up the standard for which that numerous family is famous thruout the civilized world.

This article has to do with Stanley V. Smith, Pueblo county. Stanley was born on a farm in eastern Kansas. When he was five years of age his father was elected probate judge and the family moved to town. Young Stanley demurred. In spite of his tender years he felt that the farm was his place and the neighbors say he kicked up an awful fuss when he was bundled into the surrey and taken to town by his parents.

Fate was not to be thus thwarted, for when the four-year term was up Father Smith listened to Stanley's pleading and took the whole family back to the old farm, where the boys could chop wood, milk cows, curry the horses and help with the field work until time came for them to go to college. Each in turn was sent to Kansas State Agricultural College at Manhattan, where three of the boys and one of the Smith girls were graduated. One of the boys, upon graduation, entered the States Relations service as a county agent in Oregon, the other is in the editorial department of the U. S. Department of Agriculture.

Stanley Smith was compelled to drop out of college three times, once because of his father's death and on two other occasions because of financial stringency. He taught country school one year and saved enough to get another year of college. The second time he quit school he got a job selling nursery stock in western Nebraska and Kansas and eastern Colorado. Having specialized in horticulture, he was able to tell the farmers what kind of trees to select for their own conditions, how to plant them and how to care for them. He worked for a responsible house and he possessed an old-fashioned farm conscience, consequently he was able to go back to the same district the following summer and sell more trees. Now when he goes back over his old territory and sees literally hundreds of thousands of flourishing trees it gives him some satisfaction of the sort that does not always come to nursery salesmen. Most of them are afraid to go back.

He finished college in 1910 and was immediately sent by the horticultural department to southeast Kansas to assist in some spraying demonstrations. While there he heard of a vacancy in rado Agricultural College, applied for the place and got it. He began work there in September, 1910, and remained as instructor in horticulture until Pueblo called him to take charge of development of agriculture in that important county.

He has found the field one in which the services of an agriculturist were needed. Tactful and persistent effort on his part is beginning to count; the farmers are getting together in community organizations; club work is progressing among the boys and girls. That training on the Kansas farm and the subsequent schooling, mixed with practical business experience, is bringing results.

Four Pit Silos Insure Winter Income From Cream

Continued from Page 4

That extra silo filled with corn or one of the kafirs then pays for itself as milk insurance.

Crop List is Short

The crop list at the Cheyenne Wells station is short; corn, kafir, milo and cane are the principal crops. Dwarf kafir is grown, as the standard variety will not mature. The dwarf does not always make grain, tho always giving good forage. Milo and corn hold about even in normal seasons, but comes the dry year when corn blasts, milo stands still and revives with the first late rain, making a crop of some kind under conditions that no other plant will weather.

Swadley is Mr. Adams' favorite variety of corn. This will always mature when the rainfall is at all favorable but the yield varies greatly, going from 10 to 40 bushels, according to the season. It makes two to six tons of ensilage to the acre.

White milo of medium height is grown and it has besides its drouth resistant qualities, immunity from smut to recommend it over corn.

In 1915 milo made twelve tons of silage to the acre against four to five tons of corn; while the milo did not mature, it is this silage that brot the hundred-a-month cream money fifteen months after it was "canned."

Kafir, while not as reliable for grain as milo, is liked by Mr. Adams because of its ability to produce forage. In the sorghum he grows Western Orange, which he says stock prefer to the amber variety. It makes double the tonnage of amber, tho the amber is a surer crop under very adverse conditions.

No cash grain crop is grown. Everything is fed on the farm. For the work stock there is a patch of oats which are not threshed but cut and fed as hay. There is a little millet and an acre or so of wheat for the chickens. The wheat is not threshed but stacked near the chicken yard and thrown out to the fowls daily, so that they can scratch for the grain.

Cost of Buildings

The cost of the dairy barn including the four silos, concrete floor, stanchions and full equipment was $1,000. Most of this value is inside the barn, as the walls cost nothing for material except labor, which of course is included in the above figure. The main barn is 60 x 26 feet and it includes large storage space for dry fodder. Of the $1,000 about $400 is taken as the cost of the four silos and the building which covers them, together with equipment for raising and feeding the ensilage.

In the center between the four silos there is erected a derrick, embedded in concrete, from which the silage box is suspended on pulleys, regulated by a windlass. The box can be swung around at will and lowered into any one of the four silos and filled. It is then lifted out by the windlass, lowered onto the concrete runway leading into the feeding barn, and run on its own rollers between the two rows of stanchions, where the ensilage is forked out to the cows.

The collars on the four silos, like the barn housing them, are constructed of adobe, plastered over with a three-quarter inch coating of concrete.

The calf barn is a new structure, separated from the general dairy barn. This, together with hog house attached, cost $150 and is built of adobe bricks.

Superintendent Adams says it is not necessary to have the soil type known as adobe for the construction of buildings. In fact, the Cheyenne Wells barns are not of that type of soil, but of ordinary dark loam. He says:

"We select for our bricks the blackest soil with the least sand. The heavy sod has the most roots and we cut just deep enough to get the grass roots. After selecting our soil for building blocks we plow furrows and then cut up the earth with a disk. We haul water to the spot and muck the soil, cutting up and mixing just enough to handle conveniently in half a day. We have one form and after the bricks are moulded and left on the ground for half a day, they are turned on edge and thus left to dry for about ten days, which is sufficient if the weather is favorable. We then haul the bricks to the building site and lay them in mud made from the same kind of soil. It is not necessary to have what is known as adobe soil to make these building bricks, but most any good tight soil will do. There are soils that will slack when exposed to the elements and these naturally will not do, nor will a sandy soil answer the purpose."

Hens Lay in Winter

The open-front poultry house which shelters from 60 to 80 laying hens, is an adobe style building. Early hatching brings winter eggs. Mrs. Adams looks after the hens and while she has an incubator, she prefers the setting hen. She sets her first hens in March and usually has some pullets laying in September. The chickens are never allowed outdoors when the weather is severe, nor when the snow is soft. Mrs. Adams has a system of setting two hens in one coop. After they hatch out the eggs, she removes one of the hens and turns the chicks over to the other. The hen is kept shut up in a portable pen that allows the chicks to run outside. Naturally when a storm comes they run back to the hen and the usual spring losses are avoided.

This is just a part of the story of how this experimental farm is run in a practical way—an unusual thing for farms of that character. The man who goes to Cheyenne Wells expecting to see a show place will be disappointed; he who goes to learn will find even a day's visit crowded with interest and information of practical value.

This station is run for the benefit of the people and Superintendent Adams gladly answers questions about his farm practices and his experience with the dairy herd, the silos and the crops that keep them filled.

Deformed Calves

I had thirty head of range heifers, two to three years old that had calves with crooked necks, legs and spines. These heifers were fed all the timothy hay they would eat during December, January, February and March, and started to drop calves the first of April, the winter not being very cold. My bulls are changed every two years, and I use nothing but thorobred bulls. Now, what makes the deformity in this bunch of calves?—G. S., Gunnison Co., Colo.

It is hardly possible to assign a cause for the deformity of these calves without more definite knowledge of the facts. We do not know of any disease which would have thi effect. The symptoms would point to mal-nutrition of some sort, possibly due to a lack of mineral matter. Alfalfa hay is better than timothy for growing cattle. A little oil cake in addition to the hay might have improved matters.

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WESTERN FARM LIFE
Denver, Colorado

"ROUGH ON RATS" ends RATS, MICE, Bugs. Don't Die in the House. Unbeatable Exterminator. *Ends* Prairie Dogs, Gophers, Ground Hogs, Chipmunks, Weasels, Squirrels, Crows, Hawks, etc. The Recognized Standard Exterminator at Drug & Country Stores. Economy Sizes 25c, 50c. Small 15c. Used the World Over. Used by U. S. Gov't. Rough on Rats Never Fails. *Refuse ALL Substitutes.*

Pinto Beans; the New Cash Crop of the Plains

Continued from Page 3

pounds of pintos in 1916 between tree rows under irrigation, and he tells of his methods as follows:

"I have grown Mexican beans for several years in my orchard. I have a twenty-acre apple orchard and in order to make the ground pay while the trees were coming into bearing I planted beans between the tree rows. I selected the Mexican beans for two reasons: First, they don't waste or shell out so bad in harvesting as other varieties and the leaves stay on the vine until they are fully ripe. In fact they stay on the vine until you get ready to pull them. The other reason was they are small enough so that they can be planted with a beet drill and are a good yielder. If planted with a beet drill they can be cultivated with a beet cultivator and in this way are easily kept clean.

"In the fall I took the moldboard off my plow and welded a thin, narrow piece on the shear, so that it would extend about a foot longer than the shear. I put one horse on the plow and cut them up and gathered them with a fork. They yielded about 30 bushels an acre and I have found ready sale until this year at 4 cents.

Beans in the Orchard

"I threshed 17,000 pounds and I consider my bean crop almost clear gain as I had to cultivate the orchard and care for the trees. My orchard is now six years old and has done so well that I won't try to raise any more crops between the tree rows. They have this year produced about 1,000 bushels of apples.

"The beans do not hurt the soil nor interfere with the growth of the trees. You will see from the figures that the land brought me $72 an acre. Three years ago my beans brought me $90 an acre and my trees have done better than if I had not cultivated and cropped the ground. You can grow the beans right up close to the trees but in measuring the ground to determine the acreage in beans allowance was made for that actually occupied by the trees, especially when the trees began to spread out.

"I know of no crop that is as profitable and does as little harm to the soil and trees as beans in the orchard. I can raise about three acres of beans with the same labor that it takes for two acres of sugar beets and the bean hulls will offset the beet tops for feed. This leaves the balance in favor of beans. I don't expect my brother beet growers to agree with me in the last assertion, but this has been my experience."

Bean Anthracnose

Bean anthracnose is the most prevalent of the bean diseases in the west, tho the growers are reporting other troubles here and there that need preventive measures, such as the selection of seed from healthy plants and spraying. Growers may obtain free on application to the Colorado State Experiment Station, Fort Collins, a copy of Bulletin 212, which handles this subject. The following is quoted from the bulletin.:

"The disease is found on all parts of the bean plant above ground. One is usually attracted by the spots on the pods. These are at first small and dark colored. They increase rapidly in size up to a quarter inch or more. Spots may run together and cover the greater part of the pod. They are round or oval, sunken, nearly black, or at times pinkish and usually surrounded by a reddish zone. On the leaves the spots are found mostly on veins and stem. The spots on the seed are located directly under pod spots.

"Control: Use seed from healthy plants only. Burn all diseased plants after harvest. Do not use the same soil year after year, but rotate with some other crop. This is necessary because the disease organism lives two or three years in the soil.

"Spraying with Bordeaux mixture will hold the trouble in check. The first spray should be applied as soon as plants are up, then again 10 or 15 days later, and a final spray when the pods are forming."

There is as much difference between Boston baked beans and the pinto beans cooked in southwestern fashion as there is between a lemon and an orange. Frijoles (pronounced free-holas,) should be prepared in the Spanish-American way in order to be appreciated by the epicure. In the households of those southern Colorado and New Mexico people who are of Spanish descent the art of preparing frijoles has reached perfection. The recipes used do not appear in cookbooks, and literature was silent on this subject until within the last year, when Mrs. Alice Stevens Tipton of Santa Fe compiled at the request of the New Mexico state land board, a booklet entitled "New Mexico Cookery," which is the only work that does justice to this long neglected subject. From this we quote just one of the numerous ways of preparing frijoles, which are used by the Spanish-American population in many combinations and form one of the staple articles of food of rich and poor.

"One of the principal products of New Mexico and certainly one of its staple crops, is the native bean known as the frijole. It is very nutritious and extremely palatable. One great fault with inexperienced cooks in preparing beans is that they do not let the beans cook long enough. Some seem to think that if they can be mashed between the fingers they are done, whereas a bean can be mashed between the fingers when it is but half done and wholly unwholesome. A half-cooked bean is very indigestible and in their preparation according to these recipes, it is of the utmost importance that they be thoroly well cooked.

"For an ordinary meal take a quart of New Mexico beans. These beans are either a dark reddish color, or a light buff with dark brown spots on them, and are somewhat larger than the so-called navy bean. They are very rich and oily, with a most delicious flavor. Soak them in cold water over night and in the morning put them on the stove in a large kettle well filled with cold water and let them come to a boil; then set them where they will cook slowly all day, if possible, but not less than six hours. If you cannot let them cook all day, they may be cooked a little faster, but they must be watched carefully to prevent their scorching, which ruins them. It is much better to let them just simmer slowly all day, than to hurry their cooking. When they have cooked so that they mash at the lightest touch, you may set them aside until ready to use. The kettle should be kept well filled with hot water while they are cooking, but do not add cold water under any circumstances, as that tends to toughen the beans. Keep a kettle full of hot water on the stove handy for refilling the bean kettle. They should be salted to taste and that means to taste them and see if sufficient salt has been used, when they are about half done, or when they begin to get tender.

Farmers make bigger profits on this $30. land in Colorado than on $200. land in Middle West

READ WHAT FARMERS ON THE GROUND SAY

Mert Cozad, formerly of Decatur County, Iowa, moved to the Kiowa Valley of Colorado just three years ago. Then he was worth less than $3,000. Today he owns a 640-acre farm, well improved, and is worth upwards of $20,000.

Jake Young, who farmed for a number of years in Kansas and adjoining states, says: "I make a darn sight more money here in Kiowa Valley than I ever did anywhere else."

George Monteith, a successful farmer from Iowa, says: "I make more than twice as much on my farm in Kiowa Valley as I ever did in Iowa, and on practically the same investment of money and labor."

What's the secret of the success of these men? No secret at all. What these men have done other good farmers can and are doing. Men from Missouri, Illinois, Nebraska, Oklahoma and adjoining states are doing equally well in Kiowa Valley.

R. T. Beswick, formerly of St. John, Kansas, says: "Kiowa Valley produces better wheat, corn, oats and alfalfa than Kansas land at three or four times the price."

Reasons for Larger Profits

Bigger profits in proportion to labor and money invested can be made in Kiowa Valley because—

the cost of land is less,
the cost of raising crops is less,
and the selling price of farm products
is in many cases MORE.

The Rain Belt of Colorado

The land is easy to cutlivate. There are no stones or stumps to contend with. The soil, which is a rich chocolate loam, works up easily, does not wash and does not clod or bake after a wetting.

Farm products bring high prices. Denver, with its 250,000 population, large stock yards and flourishing grain market, is only thirty-five miles away, and millions of dollars' worth of farm products are imported by Colorado every year that might just as well be grown in the state.

Farmers Make Three Profits

The man who owns a quarter section in the Middle West can make money three different ways by moving to Kiowa Valley.

First, he can sell out for say $100 an acre and buy as good land in the Kiowa Valley for $30 an acre. Allowing another $20 an acre for improvements, he will have cleared $50 an acre, or $8,000 on the transaction.

Second, his Kiowa Valley farm will be a better revenue producer than his Middle West farm.

Third, he will participate in the rise in land values that has been going on for some time and is sure to continue.

Charles Hess, who comes from Black Hawk County, Iowa, bought a quarter section in the Kiowa Valley two years ago, for which he paid $20 an acre. Recently he refused $40 an acre—a profit of nearly 100 per cent on his investment.

A Chance for the Renter

The renter who may never be able to get together enough money to buy a good farm in the Middle West can start with small capital in Kiowa Valley. The amount of money that the renter pays every year for the use of land in the Middle West will buy a farm outright in Kiowa Valley and give him clear title in three or four years. Then he will be free of the rent burden forever.

The kind of land that sells for $100 to $200 an acre in the Missouri and Mississippi Valleys can be had for $20, $25, $30 and $40 an acre in Kiowa Valley. The reason for the low price of land is simply that the country is not as well settled up as the farming sections of the Middle West. But as rapidly as the truth about this fertile valley becomes known, and new settlers move in, up will go the price of land.

The principal crops are wheat, corn, oats, barley, sorghum cane, Mexican beans, alfalfa and Soudan grass. Hog raising and dairying are especially profitable.

Colorado Climate is Best

The climate is the same invigorating, health-giving kind that brings tourists and health-seekers to Colorado by thousands every year. People who have asthma or any form of lung or throat trouble are much benefited by the mild, bracing atmosphere. Stock can live out in the open practically all the year round. Hot winds, cyclones, hog cholera and cattle epidemics are unknown.

Kiowa Valley is pierced by the Union Pacific Railroad which gives fast and frequent train service. The trip to Denver is only an hour to an hour and a half by automobile over an excellent road.

You will find plenty of hospitable neighbors waiting to welcome you in Kiowa Valley. You will also find good roads, excellent telephone service, schools, clubs, church organizations, and many other things which go to make for a happy and prosperous home.

For You or Your Son

Kiowa Valley is the place for the well-to-do farmer to make bigger profits than he has ever made before. It is also the place for the young man to make a start with every opportunity for success.

RICH RANCH LAND Cut Up Into Farms

Here is a description of a few of the many desirable tracts that can now be bought in Kiowa Valley:

640 ACRES, fenced, creek runs through east half, 100 acres bottom land, balance very level wheat land; timber along stream; one mile to school; eight miles to town. Price, $27.50 per acre.

640 ACRES, one mile from thriving town, on Lincoln Highway, all level bottom land. If in crop should be worth $100 per acre in two years. Price, now, $40 per acre.

320 ACRES, fenced three ways, slight draw in south end, cutting some hay, a very fine laying half section in center of Kiowa Valley, eight miles to town. Price, $27.50 per acre.

160 ACRES, a beautiful, slightly rolling tract, partly fenced, heavily sodded; will cut some hay, no waste land; surrounded by improved farms, fourteen miles to two good towns. Price, $20 per acre.

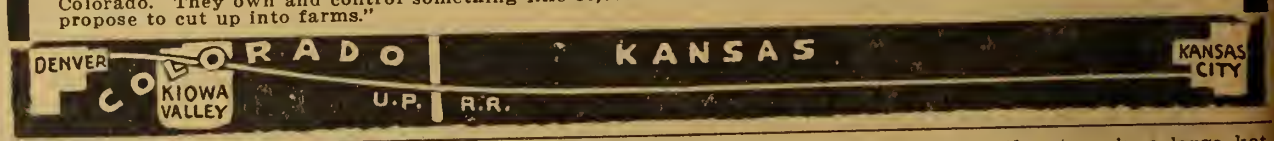
640 ACRES, fenced and cross-fenced, small orchard, well grassed, good well, slightly broken on east line, balance very level, school on section. Price, $25 per acre.

Terms—One-fourth down, balance in two, three and four years. Will divide tracts to suit.

Write Us Today for maps and full information as to land, crops, etc.

Reynolds, Covey & Reynolds
Owners of Kiowa Valley Lands
263 McPHEE BUILDING
DENVER, COLORADO

Who Are Reynolds, Covey & Reynolds? They are one of the oldest and most reliable land companies in Colorado. They own and control something like 30,000 acres of rich ranch land in Kiowa Valley which they propose to cut up into farms."



Western Farm Life

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FEB - 2 1917

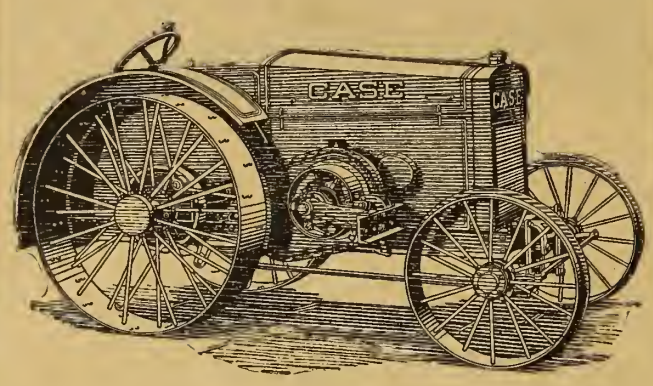
THESE SPUDS BRING SAME PRICE AS APPLES

Smooth, velvety skin, regular in size and shape, rather large but good looking and better tasting; of baking size and quality. These potatoes are retailing readily on the Denver market at five cents a pound and bringing over six cents on the Chicago retail market. The marketing of such spuds stimulates consumption. The Colorado Potato Growers' association will aid growers in the Rocky Mountain region in improving their output. People will eat more potatoes if they get good ones. The high price the consumer is willing to pay for quality more than compensates the grower for seed selection, rotation, standardization of varieties and type.

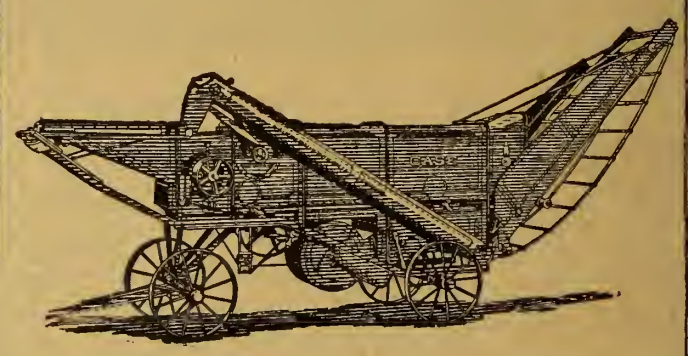
Denver, Colorado
Feb. 1, 1917

CASE

9-18 Tractor



20x28 Thresher



Every Farmer Wants a Combination Like This

Above we picture a Case 9-18 all-'round farm tractor and the new Case 20x28-inch thresher. Here is a combination which can't be beat. It brings to every farmer a new independence and greater economy. We are the first in the field to satisfy the growing demand for such a *handy team* of machines as this.

Even if you are not in the market today, you should be thoroughly acquainted with these remarkable labor-savers. They are described and pictured, together with the complete Case line, in our new 75th anniversary catalog, just off the press, which will be sent to you free upon request.

CASE, the Standard Tractor

The Case 9-18 tractor is truly an all-'round mechanical farm horse because this tractor is so useful.

It will pull manure spreader, gang plow, harrow, grain drill, planter, digger, mowing machine, rake, hay loader, harvester, haul crops and other materials.

It will drive a small thresher, a silo filler, feed grinder, fodder cutter, corn sheller, wood saw or hay baler. It operates a milking machine, also dynamo for electric lighting, and many more jobs.

This Case 9-18 has a four-cylinder valve-in-head special tractor motor, and is built for continuous hard pull without overheating. All gears are enclosed and run in oil. Center of gravity low down; therefore no danger of upsetting. Short wheelbase makes for easy turning in close quarters. A boy can operate it.

Don't buy a tractor before you've learned all about the Case. It pays to investigate thoroughly. If you're from Missouri, we "can show you."

The Sign of Mechanical Excellence the World Over.

Do Your Own Threshing

Thousands of farmers have asked us to add a smaller thresher to our line, so that they might do their own threshing. They have come to us because Case has long been the leader in the threshing machine business. So we have designed and built the Case 20x28-inch. It is especially adapted for small tractors. While we recommend the Case 9-18 all-'round tractor with it, this 20x28-inch separator can easily be driven by other power of like capacity.

With the Case 20x28-inch thresher there is no need to await your turn and run a risk. You may thresh as much as you please, whenever you please. This means absolute independence. Also extra profits, if you have time to handle some of your neighbors' crops.

The Case 20x28-inch thresher maintains the same standard of excellence as the larger models, which is sufficient proof of its performance, economy, durability and results.

We want You to know all about this Case 20x28-inch thresher before you purchase a machine. Samples will be gladly shown at all of our 44 Branch Houses.

J. I. CASE THRESHING MACHINE COMPANY, Inc., 358 Erie St., RACINE, WIS.

FOUNDED 1842

(490)

Four other Case tractors besides the 9-18, as follows: 10-20, 12-25, 20-40 and 30-60. A size for every need—a size for every farm.

Eight sizes of Case steam engines: 30, 40, 50, 60, 65, 75, 80, and 110 h. p. None as good as these have ever been manufactured. They have proved superior.

Seven Case steel threshing machines in the following sizes: 20x28, 20x36, 26x46, 28x50, 32x54, 36x58 and 40x62 inches. These meet every demand. Case threshers always set the pace.

Case baling presses, in two sizes, 14x18 and 17x22 inches; also a 17x22-inch automatic baler. They do the most work in the least time.

Case silo fillers have big capacity and require least power. Their performance is unequalled, like all other Case products.

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WESTERN FARM LIFE

A Western Magazine for Western Farmers and Stockmen

Comprising Ranch and Range, Farmers Life and Fruit Journal, Trans-Mo. Farmer and Ranchman

Largest Circulation of Any Farm Magazine in the West

Volume XIX DENVER, COLORADO, FEBRUARY 1, 1917 Number 3

(Photo copyright, Harris & Ewing, Washington, D. C.)

Herbert Quick, for several years editor of Farm and Fireside, and now a member of the Federal Farm Loan Board, was reared on a farm, became a teacher and then a lawyer, and is best known as a writer on agricultural subjects.

Quick Discusses the Farm Loan Law

AT THE invitation of the Colorado Farmers' Congress, Herbert Quick, member of the Federal Farm Loan board and one of the country's foremost writers on agricultural topics, came to Fort Collins to explain the workings of the law. He dealt mainly with the question of the organization of the administrative end of the system—the Washington end, he called it, stating that the federal farm loan board had been charged with the duty of conducting the largest money lending concern the world ever saw.

"The time will come," he said, "when federal farm loan bonds will be sold in all parts of the world. It is fortunate, therefore, that the system has been placed under the supervision of the treasury department, because the United States treasury stands as high, or higher, in the estimation of financiers than any similar financial bureau in the world."

He then touched upon the matter of location of the 12 district banks, explaining the difficult problems that confronted thae board in collecting the states which were put together to form the various districts. The effort of the board was, he said, to put the weak in with the strong, so that each of the 12 districts would be able to support a strong bank and that none would be particularly weak in the matter of loans to be made, or on the question of value of the farm security. The board tried to put a sufficient amount of good territory in each district so that there would be no weak bank in any. The reason for including Colorado and New Mexico with a district comprising also Kansas and Oklahoma was to insure a bank that would have ample business to do and that would issue bonds that would sell well on the market.

He did not state why Wichita was selected as the location for the bank of that particular district, but stated that it made absolutely no difference to the farm borrower where the bank was located, because the business of the borrower with the central bank would be done by mail.

He gave the impression that it would make no difference in cost of negotiating the loans to the Rocky mountain farmer. This was one of the points mentioned by Western Farm Life in the editorial in the issue of Janary 15, namely the increased cost of appraisal, by reason of distance that the land bank appraiser would have to travel. The law states in section 13, that the federal land banks may charge applicants for loans "reasonable fees not exceeding the actual cost of appraisal and determination of title." The general belief here was that this included the expenses and railroad fare of the land bank appraiser which naturally would be increased by locating the bank at the extreme eastern end of the district. However, Mr. Quick indicated that there would be no added expense on the borrower.

This can be met by the appointment of resident appraisers in the mountain states, which probably will be done. In that event, also, the resident appraiser, backed up by the advice of a resident director, would give the borrower in the Rocky mountain states a fair and intelligent appraisement.

Mr. Quick pledged the farmers an administration free from political influence.

This point and the above mentioned regarding appraisement by men qualified to judge of the value of irrigated and non-irrigated western lands, on an equal basis of cost with appraisements made in territory immediately surrounding the central bank, if carried out as outlined by Mr. Quick, will remove the principal objections that the Rocky mountain farmer had to the remote locations at Wichita for Colorado and New Mexico, Omaha for Wyoming, and Berkeley, Calif., for Utah.

We still have an argument on the question of the alleged agricultural weakness of the Rocky mountain states as compared with Eastern Kansas and Oklahoma. While the mountain states now are sparsely populated, the thing for the board to consider was not the present alone, but the possible future development of this region, as well as the per acre production and the profit in farming in the mountain country.

We not only have the unoccupied lands to accommodate greater population, but agricultural science is giving us methods by which these are being rapidly reclaimed. This is true both of irrigable and non-irrigable sections. In other words, we are progressing while the older regions are almost at full development.

The Farmers' Congress took no action in reference to the question of location of the banks. It did go on record strongly urging upon the general public the desirability of federal farm loan bonds as an investment. The sentiment was that the system would be of untold benefit to the Rocky mountain country, and that questions involving details of management, location, etc., would be left to work themselves out, the borrower knowing that in time he will be in control of the system and that he then may correct anything that works an injustice.

Mr. Quick's talk was greatly appreciated and a lively discussion followed on the question and answer plan, the farmers being eager for information concerning the detailed working of the system.

Acre for War Relief Plan of the Farmers' Congress

AT THE session of the Colorado Farmers' Congress in Fort Collins the week of February 15, it was decided to enlist the farmers of the state in a movement for the relief of war sufferers in Europe. The idea was broached by O. F. Gardner, the retiring president, and acted on by the appointment of a committee. In brief, the plan is for all farmers who feel able, to contribute the proceeds of one acre of their 1917 crops to a fund to be turned over to the American Red Cross Society, for distribution among the starving and homeless in war devastated districts of Europe.

On this page will be found a coupon which constitutes an unofficial means of ascertaining the sentiment of farmers.

Charges have been going the rounds of the eastern press that the western farmer is cold-heartedly ignoring suffering in the countries at war, while enjoying prosperity due, in large measure, to war prices.

There are two fallacies in that accusation. The first needs no refutation, namely that the farmer of the West is heartless. The reverse is true. The second clause in the indictment is equally untrue. The farmer is getting good prices, but he is paying out his surplus in meeting his part of the high cost of living as a consumer. Added profits on staple food products he has for sale are more than absorbed by higher prices he pays for clothing, shoes, dry goods, implements, household and farm equipment, fuel and lumber and such food as he is forced to buy.

But that aside, the farmer is prepared to do his share in meeting the needs of war sufferers and he will reserve his acre for the benefit of the Red Cross relief fund.

The committee in charge of the movement is composed of the following named: C. L. Hover, Longmont, first vice president of the congress for 1917, chairman; David Halls, Mancos, president of the congress; Prof. H. T. French, director extension department Colorado Agricultural college; and the members of the executive committee of the congress, by districts, as follows:

Denver District—George McCarroll, Denver.

Northern District—R. M. Haythorn, Eaton.

Northeastern District—J. G. Evans, Fleming.

Western District—L. M. Rogers, Grand Junction.

Southwestern District—Frank Eldredge, Durango.

San Luis Valley District—D. E. Newcomb, La Jara.

Northwestern District—Geo. Bushyager, Craig.

New Plains District—L. F. Brammier, Burlington.

Arkansas Valley District—H. W. Bowman, Trinidad.

The first meeting of the committee was held during the session of the congress and tentative plans were made for the campaign, the details of which are to be announced later. This conference was attended by the county agriculturists.

Western Farm Life wants to hear from the farmers of Colorado and other states as well. The coupon on this page should be filled out and sent to this office as soon as possible. Colorado farmers who wish to devote the proceeds of one acre of crops to the fund, to be cashed in next fall, or who want more complete details of the plan, may fill out the coupon and the names will then be turned over to the committee, which will get into communication with the signers. Other western states will probably wish to join in this movement, consequently coupons coming from farmers in New Mexico, Wyoming, Idaho and Utah will be referred, by Western Farm Life, to the responsible authorities in those states. This is to be a free-will offering and it would not be fair to the farmers to confine it to any particular state, tho, as far as organization is concerned, Colorado is the only state that has yet set things in motion.

Probably some distinction will be made by the committee between general farm crops and trucking or fruit crops. The latter might be worth anywhere from $150 to $1,000 per acre, consequently it has been suggested that some other unit than the acre be adopted for these high revenue crops. These details are still to be worked out. The business now in hand is to find out just how the farmers of Colorado feel about this and whether or not they intend to take hold and make it the big success that the cause deserves. Don't worry about the city man's part; the movement will expand of its own momentum. Let the farmer set the pace.

It is not absolutely necessary to use the coupon. That is merely a form arranged for your convenience. Send in your name and urge your neighbors to do the same, if they wish to help.

For One Acre of War Relief

Please list my name with the WAR RELIEF COMMITTEE OF THE COLORADO FARMERS' CONGRESS as one of those who wish to be considered in this campaign, for the proceeds of one acre from my 1917 crop to be donated to the American Red Cross Society for the relief of suffering and starvation in Europe. This is not a pledge but a preliminary listing of my name, so that the committee can communicate with me in regard to details.

.....(Name)

Postoffice address.....

.....

How the Farm Poultry Flock May Be Graded Up

W. E. VAPLON

WHAT per cent of farm poultry flocks are pure bred? What per cent of so-called pure-bred or standard-bred hens are profitable from a commercial standpoint? Are so-called pure-bread or standard-bred hens better egg producers than hens not so bred? Why? We are asking these questions not to answer them, but to provoke answers—answers that are conclusive.

That the farmers' flocks need improvement in both appearance and performance, goes without saying; what the improvement shall be is not a settled matter, except in the minds of those who say that the remedy for the mixed or so-called mongrel flock is standard-bred stock. This has been repeated so often that we almost universally believe it, if for no other reason than that there are no contradictory assertions.

We have never read anything in the Standard of Perfection as made by the American Poultry association, that mentions productivity. There is much about shape, much about color, some about size, but nowhere is the egg mentioned. If the farmer is not to consider eggs in breeding up his flock, if he is to keep fowls because of their conformation according to the dictates of the Standard of Perfection, then he must look to other sources than eggs for his income UNLESS the hen bred for shape, size and color is more prolific than her half-bred sister. The fanciers tell us she is; that this standard-bred hen lays more eggs and lays more high priced eggs than one not bred to standard requirements. No convincing arguments are made, simply the assertion, and repeated utterances are convincing if repeated often enough.

Must Use Horse Sense

When will the poultry breeder use as much horse sense in breeding, in creating a standard, and in making requirements for registry as does the breeder of dairy stock? Ever hear of a dairyman disqualifying a cow because of a white spot, or a little off color in the legs, or a dent in the brisket, or red in the ear, or tail at a wrong angle, or a little underweight? But we poultrymen disqoalify, for matters as irrelevant, stock that from a commercial standpoint is oftentimes superior. Were the requirements of the standard, shape, size and color, based upon productive factors, as are the requirements made for dairy stock, there could be no argument against the assertions that standard-bred fowls are the most prolific.

It is stated that the producer of Denmark and some other European countries receives 90 to 95 per cent of the money paid by the consumer for his products, while the American producer only receives about 40 to 45 per cent of the money paid by the American consumer. The producer is prone to blame the middlemen, the transportation companies, the consumer and everyone else, but especially the middlemen for this condition.

It is true that there are too many middlemen living on the consumer; it may be true that transportation charges are too high; it is equally true that the producer is very much to blame for not receiving more for many of his products. This is especially true in regard to poultry and eggs. The market pays 20 to 40 per cent more for large hens than for small hens, but the average farmer pays little attention to size; prices of hens and roosters are usually much higher in later summer and early autumn than at holiday time, but he pays little or no attention to time of marketing; poultry of a uniform size and appearance always bring more than a mixed shipment, but uniformity of size and appearance are the least consideration with him. Eggs of a uniform color and size, freshly laid and clean, are never a drug on any Rocky mountain market, yet practically no graded stock goes to the city from the farm. Is it any wonder that the producer gets so little of what the consumer pays, when to get these products to the consumer in good shape and condition necessitates much labor and expense by the middlemen? When the producer pays more attention to supplying the trade with a choice, selected, graded product, much of the loss between producer and consumer will be eliminated.

Consider Market Requirements

In seeking to improve the farm flock the market requirements should be carefully considered and the product for which the market will pay the best price should be produced. Once the decision is made as to what this product shall be, this purpose should never be lost sight of and the line of breeding decided upon must forward this purpose. If the production of eggs is to be the main object, then the hen producing those eggs most economically should be the choice regardless of size, color and shape. If white eggs bring a premium, fowls laying white eggs must be the choice, and vice-versa. If, as is generally the case on the farm, both eggs and meat are required, then the hen coming the nearest to producing both in paying quantities should be the choice. There must be a definite purpose established in the breeding of poultry and that must be kept in mind constantly, otherwise there can be no permanent progress. It is a mistake to think that hens can embody both standard qualities in high degree and laying qualities in high degree, except in rare cases which are accidental; neither can dual purpose hens be found that are both superior egg and meat producers except in individual cases.

When the purpose for which fowls are to be kept is determined, unless the flock is answering that purpose profitably, one of five methods may be followed to bring the flock to the required standard. First, disposing of the entire flock and buying the kind of stock desired; second, buying a breeding pen of the desired stock from which to build up a flock; third, buying eggs for hatching and in this way procure a breeding pen from which to build up a flock; fourth, grading up by using in the flock males of the desired type; fifth, selecting a few hens from the flock to mate with a male of the desired type for the breeding pen.

First Plan Least Desirable.

The first plan will generally be found to be the least desirable. To sell a flock, many of which must of necessity be valuable as producers, to be replaced by uncertain quality, is not good business; and to buy any considerable number of fowls of any one variety, especially of known quality, is usually a very difficult matter and a costly matter.

The second plan, of buying a breeding pen, while the old flock are made to do as good service as possible, is better. A pen of six hens will lay from 240 to 300 eggs during February, March and April, enough from which to raise 100 good chicks. If from such a start a pen of 30 or 40 pullets can be made up, there will be no need for the old stock to be kept much longer.

The third plan of buying eggs for hatching is not usually satisfactory, but in some cases may be the most convenient way of getting a start in a better and more profitable flock.

The fourth plan, of buying males to run with the entire flock, is the one that will appeal to most farmers. If pure-bred males can be secured from flocks that are answering for others the required purposes, crossing on a flock of even inferior merit, will in two or three years build up a flock that is uniform in appearance, practically even in color and size.

The last plan will appeal to comparatively few farmers as it necessitates at least one yard or enclosure, but it will bring more pronounced results the first year because of the better quality obtained in the selection of the best hens for the production of the hatching eggs.

Hen Bred For a Purpose

The hen bred for a purpose, that comes nearest to fulfilling that purpose, is the most valuable hen to her keeper. Color, extreme size, type of comb, have nothing to do with performance, therefore have no place in the standard of the commercial egg producer. In so far as color (uniformity of appearance), shape, and size have a bearing on the market value of the fowls sold for flesh, and on the size, shape or color of the egg, just so far should these factors be considered; and it is an undisputed fact that fowls, all of a size and color and that eggs uniform in size and color, are in greater demand in the market, sell quicker and bring a better price, than a mixed lot. But this uniformity of color and size in fowls may be had without destroying the producing qual-

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Potato Growers Well Started on Crop Improvement

IT WAS a Colorado potato exhibit that furnished inspiration and incentive for the great movement toward standardization, seed certification, co-operation and co-ordination of effort at improvement of that important crop in the Rocky mountain region, now in progress. This was brot out at the meeting of the Colorado Potato Growers' association, held in connection with the Farmers' congress at Fort Collins the week of January 15.

The exhibit that really started things for the West was shown at the National Potato Growers' association meeting at Grand Rapids, Mich., in the winter of 1915. It came from the ranch of Lou D. and Frank E. Sweet, at Carbondale, Colo. It was pronounced, without qualification, the grand champion among the potatoes shown from all over the United States. To top off the victory for the Rocky mountain region, Lou D. Sweet was elected president of the national association, in which capacity he is now serving his second term.

He came back to the West from Grand Rapids fired with enthusiasm for better potato culture that characterized that gathering and immediately put ideas into action by calling together the growers of Colorado at the National Western Stock Show in 1916. This was the birth of the Colorado Potato Growers' association. The organization rounded out its first year and met again at Fort Collins where, as a section of the Farmers' congress, its sessions proved one of the biggest features of a big week.

The word that went out to the growers a year ago was that the organization could not live unless it gave its members service. This plan was made effective by organizing local groups in the eight growing districts of the state, each group reporting to the state secretary its figures on acreage, stand, varieties and general crop conditions. These reports were collated with similar reports from the subsidiaries of the national association and thus compiled, copies were sent to every member of the association. Thus, for the first time, were the growers in each district placed in possession of definite knowledge concerning state and general conditions, at a time when such knowledge was of most practical value to them. Later in the season the reports were supplemented by the reports from the United States Bureau of Markets and it was this intimate knowledge, plus shortage of supply in other districts, that has given Colorado potato growers the most prosperous season in the history of the industry.

Potato Consumption Lowest

It was brot out by Mr. Sweet, who is president of the state as well as the national association, that the per capita consumption of potatoes in the United States is 2.4 bushels, the lowest of any potato consuming nation of the world. Germany's consumption is 9 bushels, England's 8.3 bushels, and that of France 7.9 bushels per capita. The cause? Poor quality, due to planting culls, failure to rotate, running down the vitality of the potato and the soil at the same time. The result is that it is difficult in the middle western states to get a good baking potato except when the crop of the mountain states is available.

In support of this the president quoted a dispatch from Chicago, recently appearing in a St. Paul newspaper, showing Rocky mountain potatoes offered by high class grocers bringing $1 per peck, or $6.66 per cwt., while ordinary potatoes brot 65 cents per peck, or $4.40 per cwt. The lesson he pointed was that Rocky mountain growers should realize the opportunity given them by natural advantages of soil and a climate ideal for potato growing, and start now to grow seed on separate plots, to plant only potatoes from the most vigorous, uniform hills and free from taint of disease; grade them for market and create a national name for the Rocky mountain potato for quality, flavor and appearance that will bring added profits to the growers and give the consumer something that he will appreciate, thus bringing the industry up to the same high plane already achieved by our cattle breeders with their world beating strains.

Officers Colorado Potato Growers' Association—Reading from left to right: Dr. E. P. Sandsten, secretary-treasurer; E. R. Bliss, vice-president, Greeley district; Lou D. Sweet, Carbondale district, president; C. H. Bliss, R. A. Chisholm, Dr. C. T. Clark.

This was the message that aroused the growers to the importance of the work they have undertaken, that will mean millions added to the value of the crop and bring the consumption of potatoes in the United States up to at least half that of some of the European countries, where the people eat potatoes because of the quality, flavor and food value that comes in a well-bred product.

Prof. Milward Tells How

How improvement is to be brot about was told by Prof. J. G. Milward of Wisconsin university, whose expert advice was given Colorado growers in two lectures. He detailed the Wisconsin plan of organization, which is founded on the educational idea and has no direct commercial object, but indirectly is of vast commercial benefit to the growers, in extending their markets because of improvement in quality. So important is the work considered in that state that the legislature makes annual appropriations of $2,000 for its support, which amount will probably be considerably increased by the present session; pos-

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Lessons from Maine for Western Potato Growers

W. R. McCLELLAN

Following is the second of a series of articles by W. R. McClellan, the Greeley potato grower who recently made a tour of the eastern potato districts, preparatory to starting, in the Rocky mountain region, the first certified seed farm, under Agricultural College supervision. He paid over $1,600 for a 40,000-pound car of seed stock, purchased in New York state for delivery in March, as told in the article appearing in our issue of January 1. Subsequent articles will deal with the National Potato Growers' association meeting at Washington; the Wisconsin growers' annual session at Eau Claire, and the lessons to be drawn by Rocky mountain potato producers from the practices of the eastern districts.—Editor.

LEAVING Dean we went to Houlton, Maine, to visit E. S. Cleveland, the king seed potato grower of the United States. I had had some correspondence with him regarding my starting a potato seed farm along similar lines to his and had a very kind invitation to visit him. We talked potatoes about 15 hours out of the next 24. He was very much interested in my purchase of Dean. He had heard of him and was anxious to know all the details of his work, and he congratulated me on getting a car to start my seed farm, even at the high price I paid.

Mr. Cleveland began on the farm at Houlton 38 years ago, which is now a part of his seed farm of over 300 acres. He soon began shipping his own potatoes and buying others and some 25 years ago, after a couple of prosperous years, took a trip to Europe to see how they handled their potato crop. He found they were growing potatoes especially for seed as a business and he was so impressed with the possibilities that he came home and began the same thing. This was the beginning of Maine's great seed potato business and of Aroostock county's immense seed trade.

Has Sixteen Warehouses

He soon outgrew his own farm and began having potatoes grown outside under supervision. Now for a good many years he has grown outside from 2,500 to 3,000 acres annually. He has 16 large warehouses in Aroostock county and grows only two varieties in each locality. He begins shipping south in December, winding up in May and June in New England. He has storage for half a million bushels. He will usually contract at any time during the season, from November 1 to June 1, for a carload or a trainload of seed, and this was the first year in twenty that he had not had three-quarters of his acreage contracted by November 1. This year prices are so abnormal that he had not asked a farmer for a contract nor had any applied for one, nor was he contracting for future delivery.

He uses his own farm for seed growing. He dips seed in corrosive sublimate; sprays several times; rogues out in August any weak hills or diseased hills, or any not true to type.

In his contracts, unless the grower runs a seed plot and rogues out weak hills, he furnishes the seed, getting in the fall one and one-half bushels for each one furnished in spring. They must plow timothy and clover sod every so often, use a certain amount of fertilizer per acre, spray a certain number of times and grow according to his field man's instructions. Rows must be so far apart and plants so near in the row, as the case may be, 10 to 12 inches in row. In fall he takes the crop right from the field, big and little as they grow, at the contract price.

These ill-assorted, uneven potatoes came out of one sack, just as they were shipped to the Denver market. Some weighed not over an ounce, others as heavy as fourteen ounces, the large ones being very irregular and showing great loss in paring. This is what cuts consumption of potatoes in the home, especially when high prices prevail.

Run Wonderfully Even

Then as he sells the potatoes he runs them over a screen, throwing out any ill-shaped, or any that are too large or too small. Not many of the latter are discarded, as they like them for seed as small as one ounce and up to three-quarters of a pound. Owing to the heavy fertilization and good ground the crop runs wonderfully even. In his two warehouses I visited I don't think I saw a dozen potatoes weighing over a pound, nor over 5 per cent of throw-outs in any bin we looked at. Probably 2 or 3 per cent would cover the loss.

While he has not carried it as far as Dean, this cutting out in August of weak hills does away with much that

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Annual Meeting of the Colorado State Grange

H. S. GROVES

The largest, best attended and most successful Colorado State Grange meeting ever held closed a very busy three days' session in Denver on January the 18th. Practically every section of the state was represented and the large Fraternal Union hall was well filled at every session.

It was truly a representative body of Colorado farm men and farm women and the only way to distinguish it from a gathering of a civic body in a metropolitan city was by the frank, open expressions, the warm handshake and the general prevailing cordiality. This was the forty-third anniversary of the Colorado State Grange, which was organized in the early '70s under the most adverse circumstances. A number of the early organizers were present and to hear them recount the hardships endured by the pioneers in maintaining their order, one is not surprised that an organization composed of men and women of such sterling worth should develop into a great and influential body in state and nation.

The Colorado State Grange now numbers nearly 10,000 active members and at its present rate of increase this number will be doubled within a comparative short time. In the year 1916 forty-five new subordinate granges were organized, which advanced the order in the Centennial state to third place in the number of new granges in any state in one year.

This marvelous growth is largely due to the efficiency of the grange officials and the safe line along which the business has been conducted. "Safety First" has been the slogan. As a state body it has steered clear of commercial enterprises which has been the rock on which so many agricultural fraternal organizations have foundered.

Co-operative Dealing

Thru co-operating direct with the producer, the grange makes an annual saving of thousands of dollars to its members. The state purchasing agent reported a business of more than $35,000 done during the year 1916 and he anticipates that this amount will be doubled another year. When a farmer can save $15 to $20 on his winter supply of coal and larger amounts on general supplies, machinery, etc., etc., he finds it profitable to co-operate with his neighbors and the grange and utilize the money for other purposes and let the middlemen secure their profits in unorganized territory.

Grange Mutual Fire Insurance

One of the strong financial features of the grange is its Mutual Fire Insurance company, which has made a marvelous growth and now has insurance in force on property valued at more than $5,000,000. The rate of grange insurance is one-half of one per cent plus $1.50 for survey fees, or $6.50 per thousand as compared to 3 per cent in the old-line companies or $30 per thousand—a net saving of $23.50 per thousand. The above figures are the total premium on $1,000 for five years, subject to assessments which are less than a mill a year in 20 years. In other words, the Grange Insurance Co. does business at actual cost and gives the farmer the benefit of the large surplus carried by the old-line companies.

A commissioner from Adams county made the statement that the same amount of insurance in an old-line company for which he paid $102 he is now carrying in the grange for $19.50. Last year the company passed all previous records and wrote insurance to the amount of $1,800,000. Grange insurance is restricted to members of the grange only and is one of the many benefits enjoyed by them.

Educational and Social

The educational and social features of the grange are of equal or greater importance than the financial. Practically the entire family can become members of the grange. The children from 6 to 14 can join the juvenile grange and all members 14 and over can join the main body.

The training that all get in public speaking thru entertainments, debates and the special instruction received in legislative rules or those governing any fraternal or business organization, are invaluable.

Among the prominent speakers who addressed the grange sessions were Herbert Quick of the federal farm loan board and Ray McKaig, master of the North Dakota State Grange. Mr. Quick explained the operations of the farm loan act, answered questions from the farmers and commanded the organization in taking an active part in so important a bill which had its inception in the grange. He warned them against the organization of a thirteenth federal farm loan district as proposed in the bill introduced by Senator Shafroth, and the grange went on record as opposed to same.

McKaig Urges Organization

Ray McKaig, master of North Dakota State Grange, admonished the farmers to follow the example of those in North Dakota, take an active part in politics, organize a state non-partisan league and elect their own state and national officials. The politicians of North Dakota laughed at the farmers in presuming to nominate candidates for office, but when they elected a farmer governor, state officers and a majority of the candidates to the legislature, the politicians began to realize that the farmers had awakened to their real strength and were now in control of the state government. Master McKaig suggested that the farmers of Colorado could accomplish the same thing as did the farmers of his state, if they would only organize and work together. If they needed any assistance organizers would be sent them from North Dakota and Colorado could say to her politicians, "Once and for all take a back seat and the farmers will try their hand at running the state."

Among the important resolutions passed at the State grange was one favoring an optional county or district herd law, favoring the new educational code, opposing the forming of a thirteenth federal farm loan district, prohibiting the interstate shipment of liquor, favoring maintenance of the state tax commission, and a law that would place mining on the same taxable basis as agriculture.

Thursday evening was given over largely to a contest between the drill teams of different granges. This was held in El Jebel Temple and was witnessed by a large gathering of members of the State grange. Maple Grove drill team, in its new uniforms and under the direction of Captain C. W. Swayze, gave an exhibition that would do credit to any military team. It easily captured first prize of $50 and is making preparations to drill at the next National Grange meeting at Kansas City, Mo. Crescent drill team took second prize and Wheatridge Juvenile drill team first prize in the juvenile class. The Glendale drill team did not enter the contest, but gave their very interesting harvest drill, which brot forth much applause.

Closed With a Banquet

The State Grange meeting closed with a magnificent banquet at the Adams hotel, where nearly 150 were seated at the tables. Instead of coming on horseback, in wagons and buggies as of old, the farmers drove their own automobiles, provided their own music and transacted their business, carried out their entertainments in a way that showed them the equal to any other order.

In this connection we might add that the grange is responsible for all the legislation that has been enacted favorable to the agricultural class and their national membership, a million strong, has quit asking for remedial legislation and is now in a position to demand. If the farmers of the country only realized the many great benefits to be derived from the grange, one would be organized in every community.

A Chapter on Deep Plowing

E. R. PARSONS

It is the nature of the roots of plants to penetrate the soil to considerable depths after moisture and nourishment. It is the end and aim of the progressive farmer to encourage this tendency to the limit, so that by deep rooting his crops may be protected against drouth. It has been demonstrated time and again by experiments at agricultural colleges and by farmers in the field that the best place to conserve moisture is a foot or two below the surface, where the evaporation is practically nil, and nothing can abstract the water from the soil but the roots of crops. The top soil which we plow up and reduce to a fine tilth we call the seedbed, for there the seed gets its start. The subsoil in dry farming is often termed the root bed, for much moisture may be stored there, and when this is the case the roots of crops permeate it to depths of from two to ten feet.

It is indispensable then in dry farming that the settler should locate his ranch where there is some depth of good soil in order that the subsoil may be as nearly as possible so fertile as the topsoil. When a mistake in this matter has been made and the farmer finds he cannot plow deeply on account of gopher clay or some sterile formation within a few inches of the surface, the best thing to do is to leave such land for pasture and rent or buy or trade for a place with a good depth of soil.

The roots of plants work their way own to the subsoil very quickly. Those of corn will often reach the bottom of the seed bed in less than two weeks after sprouting; then here comes the important question, will these roots continue downwards into the subsoil or will they strike something hard and dry and curl upwards or spread out laterally between the seedbed and root bed? The answer to this depends on the condition of the subsoil or root bed as regards moisture. If the plowing has been shallow, and the surface under the plowing has become dry and hard for want of proper protection, nothing can induce the roots to penetrate it, and the result is either a poor crop or none at all. On the other hand, if the plowing has been good and deep and a mellow seedbed has been prepared in which enough moisture has been conserved to render the subsoil moist and permeable, the roots of the crop will continue straight down into it and a good yield will probably be harvested.

A Time Worn Argument

Perhaps the most radical difference between the farmers of the humid sections, and the dry farmers, is that they are farming over a wet subsoil, while we are farming over a dry one, and if we require moisture in our root beds we have to put it there. An argument often used against deep plowing which we hear so often in wet years is that crops are often secured by less work on shallow plowing. They may be, sometimes, when there is plenty of moisture, but even then the yield is never fully equal to that of the deep plowing. The reason is very obvious; when there is plenty of precipitation the surface of the subsoil will remain wet in spite of the shallow plowing above it and the roots go down; in which case the crop may nearly equal those on deep plowing, but in an average year which is more or less dry, the plowing will not be deep enough to mulch the subsoil, the surface of which will dry out, and the roots will not penetrate to the moist stratum which is our insurance against drouth.

It has been claimed by some writers that the plowing need never be more than five or six inches deep when intensive cultivation is practiced; but the crops raised by this method demonstrate that nothing takes the place of deep plowing at the start, and that deep rooting cannot be effected by excessive surface tillage only.

Any system which will not produce some kind of a crop every year is clearly unprofitable to the farmer, for if he uses up in dry years, to buy feed for his stock, all that he makes in wet years, his progress towards easy street must necessarily be very slow.

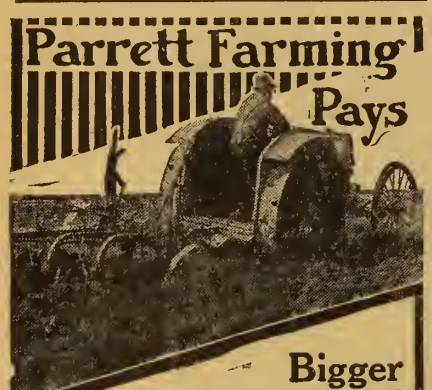
The Roots of Crops

The dry farm crop when properly rooted has two sets of roots—the surface roots in the seed bed and the tap roots in the subsoil which may be five or six feet long if the moisture conditions are favorable. The surface roots gather a richer soil solution for the reason that the top foot contains a large proportion of the humus from sod, grass roots, stubble, etc., which have been plowed under; but, IT IS THE ROOTS DOWN DEEP IN THE SUBSOIL WHICH SAVE A CROP IN TIMES OF DROUTH.

The Sod Seed Bed

When a man takes up a claim on the bare prairie his most valuable asset is the sod. The humus from desaying sod and grass roots has been enriching the surface of our prairie lands for thousands of years. The ten years of cropping this humus has demonstrated to be worth $100 an acre to the farmer in fertilizing values. To destroy this humus instead of conserving it is a crime against agriculture.

It is time, therefore, that we aban-



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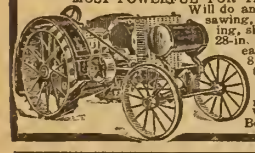

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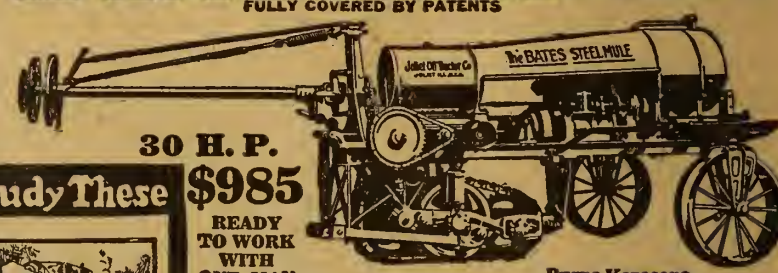

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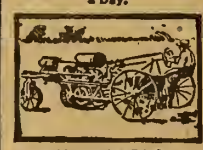

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don the old method of breaking sod two or three inches deep and leaving it to waste for a year or so on the surface. There was a reason for doing this in the old days for our grandfathers had no implements to handle it and they considered it a nuisance and something to be got rid of. The second year they would backset it and try to plow it under; but on the dry farm an attempt to do this usually results in turning the other side up—setting it back where it was before, and even then the field will be in no condition to raise a crop. When the sod is broken a few inches the mat is destroyed and nothing is left to hold down the point of the plow which refuses to cut any deeper, and skids along on the hardpan.

There is only one profitable way of breaking the prairie, and that is to plow it as deeply as possible, work it up into a fine seed bed and raise a profitable crop the first year of planting. This not only conserves the humus by mixing it with a large amount of dirt, but it reduces to a minimum the subsequent losses by tillage, for less of it is exposed to the atmosphere during cultivation than would be the case were the ground plowed shallower and less soil incorporated with it.

Another argument for creating a good sod seed bed at time of breaking is that by this means moisture may at once be conserved in the bed and the subsoil. On the prairie the precipitation seldom goes in more than a foot or 18 inches, sometimes two feet with a very heavy precipitation, and when the sod is broken two inches deep it may not go in much more; but with deep breaking it is possible to conserve several feet in a single winter. To reduce plowed sod to a respectable seed bed requires lots of work in the way of alternate disking and harrowing and in some cases rolling but half the crop which is usually a good one will more than pay for it, while the crop on two-inch breaking would not probably provide feed for the horses.

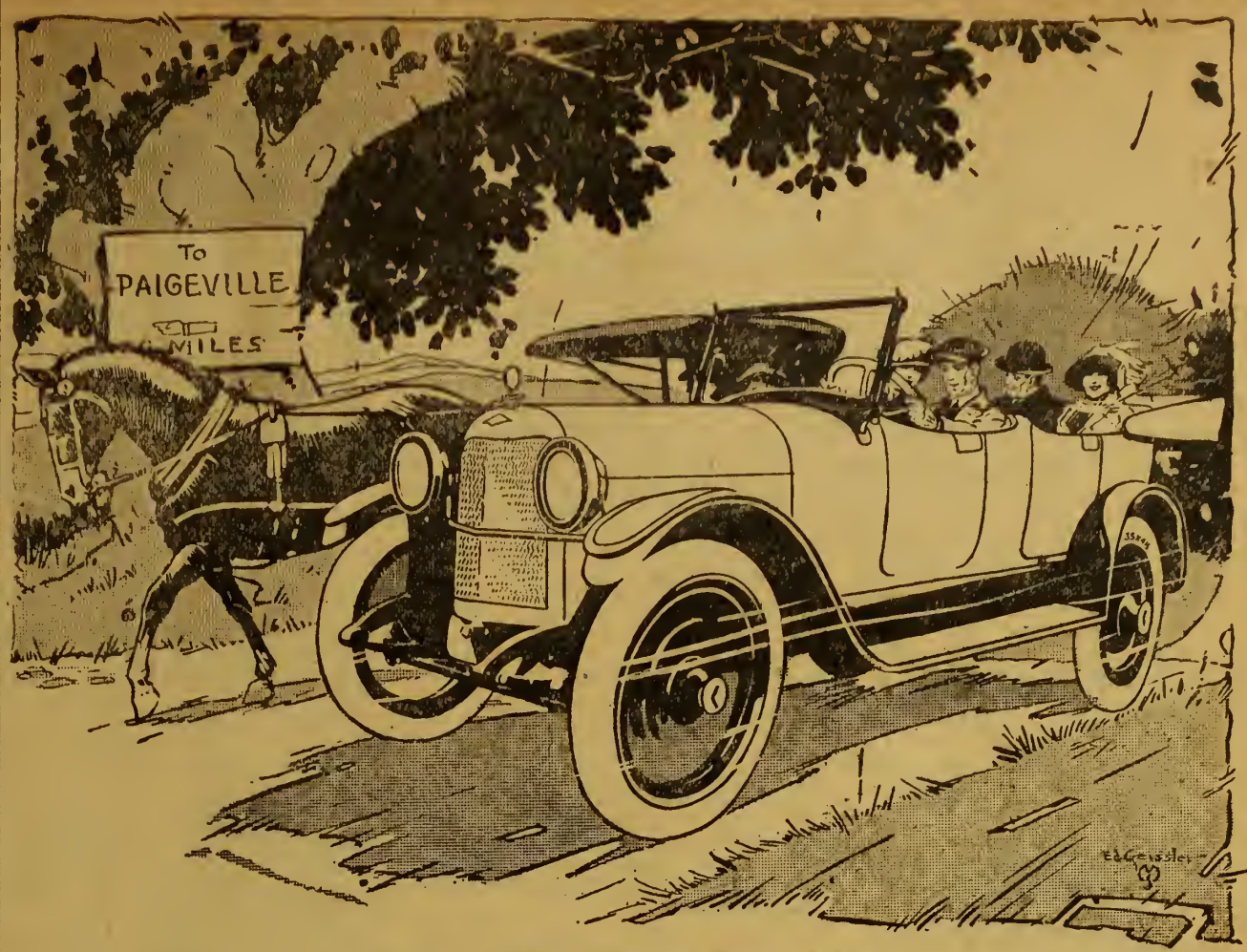
Packing the Seed Bed

We have been told by some writers that packing the seed bed will cause water to rise by capillarity from the subsoil to the roots of crops, so that there is no particular reason for deep plowing. The writer proved some years ago by soil auger tests that there was nothing in this but imagination, and the professors who tested the matter out also came to the same conclusion (Professor Kezer explains this in Bulletin 104).

The idea came as usual from the humid states where the normal condition of the subsoil is wet, not dry as it is in the dry farming country. Our subsoils take the water up from the seed bed almost as fast as it falls and in a very short time after precipitation the free water has all been absorbed into the subsoil and becomes film water. If we then test the seed bed and subsoil we will find them holding about 15 to 17%, which is the normal amount of moisture which our soils hold after all the free water has been drawn into the dry subsoil below by gravity and capillarity and becomes film water. This film water remains in the subsoil until the roots of plants get down into it and use it up. Evaporation at that depth is so slight as to be a negligible quantity.

The moisture we notice in the field after plowing and harrowing is apparent only when free water is present in the top six inches usually in the spring of the year and is not from the subsoil; but simply the top inch robbing the second and third. As soon as the free water has had time to be absorbed by the subsoil this action ceases. If moisture is found by auger tests to be rising into the seed bed in dry weather from the subsoil it is a sure sign of subirrigation from seepage of some kind or of a rise of free water from a water table under the field. The best method of securing compaction in the seed bed is to plow it ahead of time so that it can settle and pack itself. By this means it becomes packed from the bottom up, while in artificial packing it packs from the top down. Packers and rollers all work on the surface, so does the disk, but this latter exerts more lateral pressure and for that reason is the best.

(Continued on Page 17)



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The Most Beautiful Car in America

PAIGE cars are made in two sizes. There is a seven-passenger, 51-horsepower model which sells for $1,495. There is also a five-passenger, 39-horsepower model which sells for $1,175.

The "Stratford" model is, of course, considerably larger than the "Linwood." It is well worth the difference in price. But we want to point out at this time that both cars are **Paiges**—blood brothers of the same strain.

So far as a choice between these two motor cars is concerned, it is simply a matter of your individual requirements. If you can advantageously use a large, sumptuous, seven-passenger automobile, by all means invest your money in a Paige "Stratford-51."

On the other hand, if a five-passenger model is ample for your purposes, then, decide on the "Linwood-39."

It is merely a choice between a one karat or a two karat diamond. Both cars are clean cut, flawless gems. In their respective price fields, these two cars respesent the **utmost** that you can secure in automobile value.

We are putting the matter before you in this frank way, because we want to be genuinely helpful. We also want to emphasize—just as clearly as we possibly can—that Paige builds only **good** cars—quality cars.

But—above all—make it a point to see the Paige line before you buy **any** car. As a business man, you can't afford to overlook the two greatest dollar-for-dollar values in the entire automobile field. This is a broad, sweeping statement, but you can establish the facts to your entire satisfaction.

Will you make it a special point to see "The Most Beautiful Car in America?"

Stratford "Six-51" seven-passenger . . .	$1,495 f. o. b. Detroit
Linwood "Six-39" five-passenger	$1,175 f. o. b. Detroit

PAIGE-DETROIT MOTOR CAR COMPANY
234 Mc Kinstry Avenue, Detroit

Sheep Pastured on Larkspur

POISONOUS PLANTS ARE EATEN WITH RELISH

ARE sheep immune to poisoning by larkspur? According to results of experiments conducted by the Department of Agriculture, they are. But the veterinary authorities at Colorado Agricultural college are not convinced, and care is advised by Dr. George H. Glover, the well-known Western authority on poisonous plants, whose opinion was given in Western Farm Life Dec. 1, along with a review of the government bulletin.

Now comes further light on the subject, confirming the bulletin. The experiments upon which Dr. Marsh's bulletin was based were with small bunches of sheep. Under the direction of the United States forest service a test was made during the past summer with a bunch of 1,000 ewes, the official report on which is just now available. This bears out the experimental test, the bunch of ewes being placed upon a larkspur area which they cleaned up so that cattle could follow. Not only were there no ill effects, but the ewes thrived on the plants and topped the market when sold. Following is the detailed report furnished us by the forest service:

By J. N. Langworthy, Supervisor Uncompahgre National Forest

The experiment in grazing larkspur with sheep was incidental to my plan of handling both cattle and sheep on certain ranges. Much valuable forage goes to waste on many ranges where but one class of stock is allowed.

The range upon which the experiment was tried is located on the West Fork of the Big Cimarron. In spite of the watchfulness of the cattlemen, there was, prior to this year, always a loss from larkspur on this range, and the forage was not utilized. Tall larkspur (Delphinium barbeyi) was so plentiful that it was impossible to graze cattle safely. Other forage plants are those common to bunch grass range.

Mr. M. E. Diehl of Montrose agreed to handle a band of sheep in accordance with my instructions, and was furnished a permit for 1,000 head of Cotswold and Merino ewes. They were lambed in May and June, entered the forest July 1 and were close herded on larkspur until August 16, when they were removed to higher range, the larkspur having been consumed almost completely. The bunch grass was hardly touched, thus leaving the area in good shape for cattle, which drifted in after the removal of the sheep and grazed with no loss.

The sheep fattened rapidly on larkspur. A lamb was slaughtered August 15 and I never tasted sweeter or more palatable mutton.

After removal to the high range the "loose herding and bedding out" system of handling was practiced.

Mr. Diehl informed me that he was confident that tall larkspur was not poisonous to sheep.

The lambs were sold in Kansas City on October 17. With an 8 per cent cut they averaged 73 pounds and sold at $10.30, topping the day's market. Other lambs shipped about the same time from this forest undersold the Diehl lambs from 30 to 40 cents and weighed around 69 pounds.

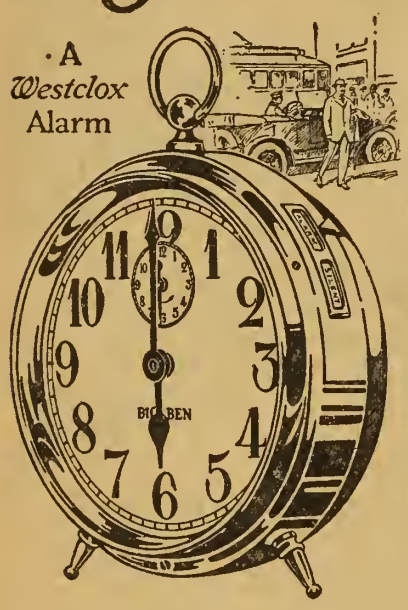
Whether better handling, diversified grazing or some fat-producing quality of larkspur was responsible for the superiority of the Diehl lambs is a question. Three separate larkspur areas will be grazed by sheep on this forest in 1917.

Some plains farmer in Colorado or New Mexico who has pinto beans for seed and needs dry farmed seed corn has an opportunity for exchanging with Henry Brown, of Riverton, Salt Lake county, Utah. Mr. Brown writes that he has a flint corn that made two double box loads of ears to the acre. He thinks it would do well in Colorado below 5,000 feet altitude, if given proper care. He plowed 12 inches deep and planted one grain every two feet in the row with rows four feet apart. He has very little of the seed left, as it was distributed among farmers all over the county by the county agriculturist, but he would like to send some pinto bean grower half a dozen ears in exchange for a small quantity of beans, as he wishes to give beans a trial in Salt Lake county. If interested write him at the above address.

Frank H. Dyer of Carbondale, Colo., was in Denver recently looking for a bunch of Holstein cows for his dairy ranch. The Carbondale district is nationally noted for its potatoes, which are produced there to the point of perfection, but the growers are not one-crop farmers. Next to naturally favorable conditions their success is due to crop rotation and livestock. A local farm loan association was recently formed in the district, the temporary officers being S. B. Mansfield, president; John Thomas, vice president, and Frank H. Dyer secretary-treasurer. About twenty prospective borrowers are enrolled and more will come in later.

Big Ben

A Westclox Alarm



SIX A. M. for the big man of business—who knows the luxury of ample time—who's up before duty insists. Try Big Ben in the business of living. Set him a little ahead.

There's success in his wake. With mind alert you're on good terms with a new day.

You'll like Big Ben face to face. He's seven inches tall, spunky, neighborly—downright good.

At your jeweler's, $2.50 in the United States, $3.50 in Canada. Sent prepaid on receipt of price if your jeweler doesn't stock him.

Western Clock Co.

La Salle, Ill., U. S. A. Makers of *Westclox*

Other Westclox: Baby Ben, Pocket Ben, Bingo, America, Sleep-Meter, Lookout and Ironclad

Rider Agents Wanted

Everywhere to ride and exhibit the new **Ranger "Motorbike"** completely equipped with electric light and horn, carrier, stand, tool tank, coaster-brake, mud guards and anti-skid tires. **Choice of 44 other styles**, colors and sizes in the famous **"Ranger"** line of bicycles.

DELIVERED FREE on approval and **30 DAYS TRIAL.** Send for big **free** catalog and particulars of our *Factory-direct-to-Rider* marvelous offers and terms.

TIRES Lamps, Horns, Wheels, Sundries, and parts for all bicycles—at half usual prices.

SEND NO MONEY but tell us exactly what you need. Do not buy until you get our prices, terms and the big FREE catalog.

MEAD CYCLE COMPANY Dept. S-304 CHICAGO

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—you can depend on—one that will stand up tight and trim the whole year 'round—one that will give and take with sudden strains and season's changes—one that will last more years, cost less for repairs, require fewer fence posts, turn all kinds of stock better, hold its shape and resist rust longer—in short, give you the most for your money in real fence service and satisfaction.

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These are the things to look for when you buy fencing. If you don't get them all you don't get full value no matter what price you pay.

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To Land Owners

If you are a land owner and have not already sent for a copy, just drop us a postal and we will mail you free and postpaid a full size copy (50c edition) of Ropp's New Calculator. This handy book quickly answers almost any problem that arises on the farm. 160 pages of money, time and labor saving ideas. Write for it, also catalog.

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Canada's Liberal Offer of Wheat Land to Settlers

is open to you—to every farmer or farmer's son who is anxious to establish for himself a happy home and prosperity. Canada's hearty invitation this year is more attractive than ever. Wheat is much higher but her fertile farm land just as cheap, and in the provinces of Manitoba, Saskatchewan and Alberta

160 Acre Homesteads Are Actually Free to Settlers and Other Land Sold at from $15 to $20 Per Acre

The great demand for Canadian Wheat will keep up the price. Where a farmer can get near $2 for wheat and raise 20 to 45 bushels to the acre he **is bound to make money**—that's what you can expect in Western Canada. Wonderful yields also of **Oats, Barley and Flax. Mixed Farming** in Western Canada is fully as profitable an industry as grain raising.

The excellent grasses, full of nutrition, are the only food required either for beef or dairy purposes. Good schools, churches, markets convenient, climate excellent. Military service is not compulsory in Canada but there is an unusual demand for farm labor to replace the many young men who have volunteered for the war. Write for literature and particulars as to reduced railway rates to Supt. of Immigration, Ottawa, Can., or to

J. L. PORTE

Dunn Block, Great Falls, Mont.

Canadian Gov't Agt.

Potatoes at Nine Thousand Feet

The sky is the limit when it comes to growing potatoes in the Rocky Mountain states. At an altitude of over 9,000 feet in the mountains of northern New Mexico, Don Aciana Medina, a Spanish-American farmer, in 1916 got an average of 150 bushels per acre from an eight-acre field. He produced 72,000 pounds of tubers of high quality, for which he will receive, after saving his own seed, prices commensurate with the altitude at which the potatoes were grown.

At the request of Western Farm Life, County Agriculturist M. L. Gonzales of San Miguel and Mora counties, under whose direction the crop was grown, furnished the following details concerning cultivation and method of handling:

"Mr. Medina's farm is located at an altitude of 9,070 feet above sea level. The soil is very rich black sandy loam. He plows in the fall about ten inches deep, allowing the land to remain open during the winter. Early in the spring, as soon as the land is thawed out, he disks about four inches deep, then he smoothes with the tooth harrow. By this time a good seed bed has been formed. Being early in the spring, the weeds come up very rapidly, and so Mr. Medina believes in harrowing and disking again very lightly before planting the potatoes. The potatoes are planted at a depth of about four inches, after which the smoothing harrow is applied to the land again.

"When the potatoes are about four inches high he begins cultivating them and the index which he uses for the number of cultivations he should give the potatoes, is by the number of weeds he can see on his farm. He calls the weeds thieves and says that if it were not for the weeds, he would not cultivate. He hand-hoes the potatoes once in order to cut down all the weeds which are in the row and among the potatoes. These weeds, if allowed to grow, will furnish plenty of seed for next year and there is no way of getting rid of them except by hoeing them out.

"The rainfall at this altitude is about 24 inches and his potatoes are not irrigated; however, there is plenty of water for irrigation, should they need any.

"Two years ago the Chas. Ilfeld Company of Las Vegas presented the county agent with 800 pounds of potatoes to be distributed among the farmers of the county in 50-pound lots. Mr. Medina received 50 pounds of seed potatoes, together with written instructions in Spanish and English as to the methods of planting potatoes and the care which should be given them during the growing season.

"The first year Mr. Medina raised 950 pounds of Early Rose and Pearl potatoes. This year he planted the 950 pounds of potatoes which he raised, and 2,550 pounds of Earl Ohio potatoes, making a total of 3,500 pounds of potatoes planted on eight acres. He raised from this area 72,000 pounds of fine potatoes, or 150 bushels per acre. Mr. Medina has the distinction of being the first native farmer to buy a potato digger. He bought this potato digger from the Chas. Ilfeld Company, thus paying for the original 50 pounds of seed which he received from them. This makes me think of the saying, 'Cast your bread upon the water and after many days it shall return to you with many fold.'"

$2,900 From 25 Acres Beans

I have a little incident which I thot might be of use to the editor or to some of the subscribers of Western Farm Life. It is about an extraordinary crop of Mexican beans which we raised on our farm this past season. We planted 25 acres, planted about 35 pounds to the acre, in rows 30 inches apart. And as we were very crowded with work we did not get to cultivate them more than twice, and irrigate them three times, and some of them only received two irrigations. None of them were hoed at all. The land was plowed about six inches deep in the spring, harrowed once, then irrigated, then harrowed twice, then planted. To irrigate the beans after first cultivation we made two furrows between each row of beans on the steep land and one wide furrow between each row on the level land.

We used a common one-row riding corn cultivator, and a 4-row P. & O. beet cultivator. But the beet cultivator was the most satisfactory, as we could steer it perfectly and take two rows at a time and by putting on the weed knives and duck feet we killed practically all the weeds between the rows. To harvest them we used the common two-row bean harvester, shocked and stacked them by hand. We got four large stacks which, when threshed, yielded a total of 54,175 pounds of first class beans. That makes an average of 2,167 pounds per acre. The beans were sold at $5.25 per 100 pounds, altho they afterward went up to $7 per cwt. Then the straw was sold at $4 per acre to a sheep feeder. This makes us a total income of $2,944.18, or an average of $117.76 per acre. We are not expecting such prices again in years and years. So much for the bean crop. Our 20 acres of sugar beets only gave an average of 14.2 tons per acre and were worth an average of $6.92 per ton.—Alfred Christensen, Fowler, Colo.

Don't send any money. If you wish to inspect Practical Farming and have not already done so, simply fill out the free inspection card or free inspection coupon which appeared in recent issue of Western Farm Life and we will send you a copy of this unusual book by return mail. There are only a few copies left so you must act at once. Address circulation department, Western Farm Life, Denver, Colo.

$1150 F. o. b. Racine
For Mitchell Junior—120-inch Wheelbase

Mitchell SIXES

$1460 F. o. b. Racine
For 7-Pass. Mitchell—127-inch Wheelbase

Now Also An $1150 Model

With Nearly All the Mitchell Extras
A Doubled Output to Meet a New Demand

Thousands of men have wanted a car with all the Mitchell extra features. But they did not want a car so big and impressive. They did not want a 7-passenger car.

We have built for them the Mitchell Junior—a Mitchell Six in little smaller size. Its 40 horsepower is ample for five passengers. Its 120-inch wheelbase gives plenty of room for five—more than most makers give.

The $1150 price gives all of the saving to the man who doesn't want extra power and size.

Last year we sent out thousands of these cars before announcing this new model. And Mitchell Junior has proved itself as perfect as the larger Mitchell. So we have more than doubled our factory capacity, to build as many Mitchell Juniors as we build of the 7-passenger Mitchells.

Hundreds of Extras

Both of the Mitchells embody hundreds of extras, paid for by factory savings. They give you at least 20 per cent extra value over other cars in their class. All because John W. Bate, the great efficiency expert, has cut our factory costs in two.

There are 31 extra features—things which other cars omit. On this year's output these extras alone will cost us about $4,000,000.

There is much added luxury. We have added 24 per cent to the cost of finish, upholstery and trimming. That is all paid for by savings made this year in our new body plant.

And there is now 100 per cent overstrength in every vital part. That is, every part is twice as strong as need be. The evidence is that this double strength makes the Mitchell a lifetime car.

Twice as Strong

The Mitchell standard for many years has been 50 per cent overstrength. Under that standard Mitchell cars have proved marvels of endurance.

Two Mitchells that we know of already have exceeded 200,000 miles each. Seven of them have averaged 175,000 miles each—over 30 years of ordinary service.

But in 1913 Mr. Bate spent a year in Europe. When he came back he started out to double our margins of safety—to more than match the highest European standards.

It has taken years to do this. But we announce this year this double strength in every vital part.

Over 440 parts are built of toughened steel. All parts which get a major strain are built of Chrome-Vanadium. We use steel alloys which cost us up to 15 cents per pound. And all the parts on which safety depends are made oversize.

One result shows in the Bate cantilever springs. We have used them for two years, on thousands of cars. And not one spring has broken.

That one fact will illustrate what this extra strength means in every vital part. For you know how springs break under shock.

Exclusive Values

These extra values are exclusive to Mitchell cars. No other factory in the world could include them at the Mitchell price.

This model plant, covering 45 acres, was built and equipped by John W. Bate. Every machine is adapted to build this one type economically. The methods employed here have cut our factory cost in two.

That is what pays for these extras. That is what pays for this vast overstrength.

Now a new body plant—building all Mitchell bodies—saves us a vast sum more. That goes into luxury—into heat-fixed finish, into rare-grade leather, into countless dainty details. The latest Mitchells are the handsomest cars under $2000.

Go see these extras, which are numbered by the hundreds. See what they mean in a car. You will not want a fine car which lacks them.

There are Mitchell dealers everywhere. If you don't know the nearest, ask us for his name.

MITCHELL MOTORS COMPANY, Inc.
Racine, Wis., U. S. A.

TWO SIZES

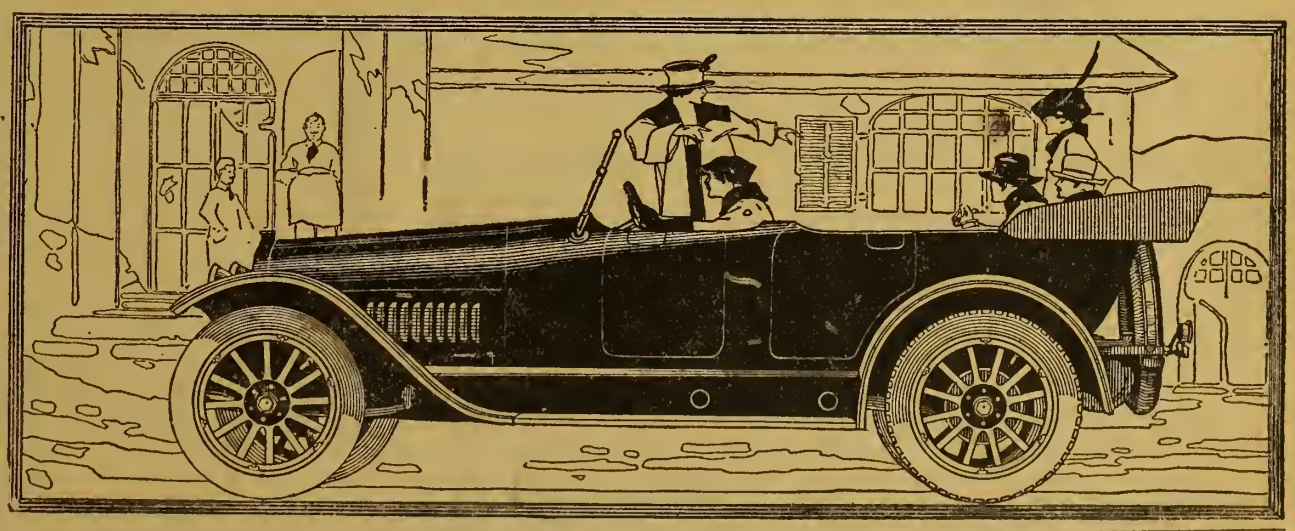
Mitchell—a roomy, 7-passenger Six, with 127-inch wheelbase. A high-speed, economical, 48-horsepower motor. Disappearing extra seats and 31 extra features included.

Price $1460, f. o. b. Racine

Mitchell Junior a 5-passenger Six on similar lines with 120-inch wheelbase. A 40-horsepower motor—¼-inch smaller bore than larger Mitchell.

Price $1150, f. o. b. Racine

Also all styles of enclosed and convertible bodies. Also demountable tops.



"HoneyDew" Melons

bring big money. Easy to grow. An exceptionally hardy plant that thrives anywhere that an ordinary cantaloupe will grow. Big market demand—fancy prices. The "Honey Dew" has several flavors combined in one—pineapple, banana and vanilla. Everybody loves 'em. We have extra selected "Honey Dew" seed on sale right now. Write at once for full information, also big catalog of field and garden seeds.

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Western Farm Life

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Watching the Legislature

Farmers all over Colorado are watching the course of the present legislature in reference to the pure seed bill. This state has suffered greatly from the practice of unscrupulous dealers and the farmers have, for several years, been demanding remedial legislation. The present movement originated in Boulder county, but it is not local in character. The bill, as drawn, has the endorsement of farmers' organizations all over the state. Western Farm Life is still receiving endorsements of the measure from individuals and organizations. From the Akron Farmers' Milling & Mercantile Co-operative association in Washington county, comes the following communication, signed by F. S. Highland, a prominent farmer:

"This is a very important matter so far as the farm interests are concerned. I caused the matter to be taken up at our meeting of the Akron Farmers' Milling & Mercantile Co-operative association and they took action favoring the legislation without a dissenting vote. We as a body composed of 92 members, are for it to a man and we shall correspond with our legislators and help all we can."

G. A. Roberts of Arriba writes: "We surely are interested in the pure seed law and hope you will pass my name along as one for pure seed. We have paid many a dollar for seed that was worthless. Only a few years ago we paid $3.75 per hundred pounds for irrigated seed potatoes that were not worth hauling home."

L. A. Kerr, Merino, Colo., writes: "I have just seen the article regarding a pure seed law. I am willing to do what I can for it. If it is required to get up a petition please send one and I will try to get as many to sign it as I can. I have seen alfalfa seed sowed that was full of thistle seed and the thistle seed came up and completely choked the young alfalfa, so that it died and the crop was lost."

Instances like the above can be multiplied by the hundred. Boulder county, where the present movement originated, got its last dose of bad seed last spring, when two carloads of alfalfa seed were dumped on the community. This seed had a germination test of 30 per cent.

The farmers of Colorado have got to a point where they work together and they now have a means, thru the county agent work, of getting and keeping in touch with each other on matters of mutual interest. If our legislators are not aware of this it will be well for them to inform themselves and act accordingly. The farmers are not asking anything that is unfair or unusual. Twenty-six states have pure seed laws, and those that do not have them are made the dumping ground for impure and dead seed. There are some farmers in both houses of the legislature and they, no doubt, are in position to give their colleagues enlightenment, if some are in doubt as to the need of this legislation. No question of politics is involved, and there is no attempt to interfere with or hamper legitimate business. It is a simple matter of justice, fair dealing and honesty, to be enforced upon all seed dealers in or out of Colorado, because some of them have no regard for these principles in dealing with their fellow men.

✦ ✦ ✦

The 640-Acre Homestead Law

The usual exaggerated statements are being made by certain periodicals devoted to the business of settling up idle western lands on the subject of the opportunities for settlers under the 640-acre homestead law. Here is the language of the act as to the character of lands that may be taken up:

"That the secretary of the interior is hereby authorized, on application or otherwise, to designate as stockraising lands subject to entry under the act, land, the surface of which is, in his opinion, chiefly valuable for grazing and raising forage crops, do not contain merchantable timber, are not susceptible of irrigation from any known source of water supply, and are of such character that 640 acres are reasonably required for the support of a family."

It is quite evident that a homestead strictly answering that description isn't much of a gift. Let him who expects to select a "farm" of this kind take into account these things: The act applies to a region where the natural rainfall averages say from 25 inches in elevated regions down to 10 or 12 inches per annum. Lands subject to irrigation cannot be designated as available under this act. Neither can lands classed as "agricultural," under which term is meant lands that may be cultivated to general farm crops.

Now as to what constitutes lands "chiefly valuable for grazing and raising forage crops" there may be differences of opinion. In actual practice it may turn out to mean whatever the applicant who makes filing can get by with. Strictly enforced, the land would not produce a paying cash crop of any sort, but only roughage and grass to support cattle or other stock.

Looking at it from the practical standpoint, a homesteader with a section of such land would have to own something besides the homestead in order to make his business pay. His 640 would make a nice pasture.. As a matter of fact, if he could grow forage crops he could grow some drouth-resistant cash crop. His success then would depend largely upon the proportion of cultivable land he secured and the amount of capital he has to stock it, make the necessary permanent improvements, such as well, windmill, fences, farm buildings and equipment. When the cost of these necessary improvements is considered it becomes a serious question whether the settler isn't paying a very high price for a lot of pasture and a little farm land.

The nice, smooth plow land in regions having 15 to 20 inches of rainfall has been practically all taken and it would not be classified under the head of grazing land anyway. What remains is for the most part either rough mountain land, with fertile but narrow valleys that can be cultivated, or sandhill land on the plains that, as a matter of true economy, should never go out of the hands of the grazer, because when broken by the plow it will produce bountiful harvests under surface soil skimming methods for a few seasons and then get into the "blowout" or desert stage thru wind movement.

For the homesteader already living on a farm, the additional right he has under this act to fill out his allotment up to the 640-acre limit with grazing land, is a boon that he has earned by hard work on his present location. He is entitled to all he can get. But as a proposition of original entry for a living, the prospective settler should carefully consider every phase of the conditions to be met. It isn't a poor man's proposition any way you look at it, nor is it a game that the inexperienced city man can tackle with reasonable prospects of success.

✦ ✦ ✦

Cain's Farming Methods

According to W. I. Drummond in the Agricultural Review, Cain fell into disfavor with the Lord because he practiced intensive cultivation. Drummond quotes Josephus, the Hebrew historian, as stating the reason for Cain's disfavor was that he was "forcing the ground." Naturally at this late day, expressions on the subject so remote in the history of mankind are mere matters of opinion, but Drummond having expressed himself, there is room for another opinion.

We do not know just what sources of information Josephus had regarding the original incident, so must be content with the declaration that Cain was "forcing the ground" and, therefore, his agricultural methods were frowned upon, tho they resulted in ample harvests. Drummond asserts that the growing of larger crops by timely tillage exhausts the fertility correspondingly quicker. Obviously, the big crop takes more plant food from the soil than the light yield, but Drummond certainly does not wish us to draw the inference that we should strive for small yields in order to keep the plant food in the soil. No, we beg to differ. It certainly was not because Cain "harassed the ground" that the Lord frowned upon his sacrifice. If Josephus has the right hunch and Cain really was "forcing the ground," it is perfectly obvious that he was using commercial fertilizers and the Lord, therefore, had reason to withhold approval, because nature never intended that man should allow the soil to get in a condition where it needed artificial doping.

✦ ✦ ✦

About Devil's Claws

Ever see a devil's claw? Not a real one, but a vegetable devil's claw, that odd looking plant of the southwestern plains that produces a pod ending in a long pair of horns? The botanical name is "Martynia Proboscides," so it has a formidable name befitting its looks. But it isn't a bit dangerous. In fact, a writer in The Country Gentleman informs us that the garden variety of this plant, when young and tender, is fine for pickling; that it is used to some extent to improve the looks and flavor of mixed pickles; that it is suitable for use in soups. It is found in the central Mississippi valley states and particularly on the plains of southern Kansas, western Oklahoma, southeast Colorado and New Mexico. As far as we know, it has no decided food value, but it thrives under dry conditions. Looking at its uncanny form in the dry autumn on the windswept plains, even a goat would disdain to eat it, or choke if it tried. Peering at the domesticated or garden variety thru the polished glass of a pickle jar it looks like a veritable aristocrat, a dainty, fit for the table of kings.

All of which gives rise to speculation as to the possible value of some other of our humble prairie plants. Would the gourd make good pumpkin pie if cut early? Our cattle eat the Russian thistle cut green, or ensiled; our chickens thrive on sunflower seeds; the despised soapweed is baled and sent east in carload lots to be made into coarse rope and doormats. May we hope for some process to extract the bitterness from the milkweed and can the juice as a beverage? Burbank has already pulled the stinger out of the cactus, so there is no telling where progress will end.

THE ACRE WAR RELIEF PLAN

WANT and woe in the wake of Europe's blood-letting has stirred the heart and opened the purse of the Colorado farmer. He has been awaiting a channel thru which to give of his store, whether it be large or small, for the relief of suffering humanity in the devastated lands overrun by the hordes of Mars. Not since time began has the hand of misery been laid so heavily upon so many peoples and nations. No flood, no earthquake, no volcanic eruption, no war of ancient days or of the middle ages was followed by such widespread suffering, so much of actual hunger and poverty as that which prevails in the countries involved in the world conflict. Millions have been given by the people of the United States, but the call for more funds for relief is insistent.

The war may end this year. The people of the United States hope and pray that the end come quickly, but even in the most favorable circumstances there will be a period of reconstruction lasting many months during which America will have to bear a large share of the burden of aiding those in distress; of succoring the widows and orphans; of providing food for the hungry, clothing for the naked; help for the blind and maimed.

It has remained for the Colorado Farmers' Congress to devise a practical method thru which the farmer may bear his share of this responsibility. That this method has in it the elements of a challenge to the East in refutation of charges made against us that we lack sympathy and that our people are cold and heartless, is merely an incident—the spark that sets fire to our generosity. In this campaign there can be no note of jealousy, for this is a work in relief of suffering brot about by the fury of hate, and it must be accomplished under the humanizing influence of love.

This is the plan: Let every farmer in the state of Colorado—and other western states if they wish to join in this movement—devote the proceeds of one acre of his 1917 crops to the relief of want in Europe. O. F. Gardner, president of the Colorado Farmers' Congress during the past year, is originator of the idea, which was born of the charges made by the eastern press that the western farmer has been blind and deaf to the call from war stricken countries. The charge is not true; the West has done nobly, but it has been done by individuals who have generously submerged their identity in that of the general public. We of the West are Americans and we do not hesitate, when it comes to digging down into our jeans, to put our contributions into Uncle Sam's tall hat. We are not sectional, but since a sectional accusation has been made let us meet the challenge with the true western spirit, open the floodgates of generosity and pour out upon ground now plowed only by shot and shell and fertilized by human blood such an offering of the fruits of our fields that starving Europe shall kneel in gratitude and thank not a Jehovah of battles, but a God whose loving kindnesses are exemplified by the spirit of the lowly Nazarene, that there are in peace-loving America thousands of men and women ready to lend a helping hand.

Alvin T. Steinel

Note. Full details of the Acre War Relief plan may be found on page 3 of this issue.

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Comment by Farmer Putnam

TELLS OF HIS MEETING WITH HERBERT QUICK OF THE FEDERAL FARM LOAN BOARD

JUST got back from Fort Collins where I was to the Farmers' Congress and such a time I had, visitin' around, havin' dinner with the Doc. Glover's one day, and supper with the Crosman's the next, attndin' banquets and doin' other things in the interest of argriculture. I done wrote about the professors and others at the college before, so I'm goin' to pass 'em up this time and tell you-all somethin' about the strangers I met with. I feel kind-a proud because I met Herb Quick. Me and him is in the same class, both of us writin' fur the farm papers. I am glad to see he's got a steady job now, runnin' the farm loan board, so's he don't have to depend on his writin'. I tell you this ain't as much fun as it looks like in print. If you-all had to do it I reckon you'd prefer farmin'. It makes a feller sweat alright.

I kind-a kept hangin' around Lou Sweet, because I knew him and Quick was old friends. Everybody as is anybody in agriculture knows Lou, so by watchin' him, directly I seen Herb come up and take him by the arm and go up to Dr. Lory's office, so I follered and hung around till Lou sez: "Come over here, Put, I want you to meet Mr. Quick."

Turnin' to Herb he sez: "Meet Farmer Putnam, he's one of our——" I didn't ketch the rest of it, but Herb grabbed my hand and sez: "Glad t' meetchu Put; heard a lot about your writin'."

He's clever alright. I know he never heard about me before, but it done me good just the same to tell me that.

I seen by the way he talked about the farm loan banks that he was some kind of a lawyer and mighty good at explainin' things. You know Denver didn't git no farm loan bank and a lot of us feliers was sore. I was kind-a figgerin' on gittin' to be a appraiser, but that ain't the reason why I was sore about Wichita gittin' the bank. Not that I got anythin' ag'in Wichita. She's a fine little city; nice and quiet so's the directors won't be disturbed in countin' money that comes in from the sale of bonds; a nice warm place fur the summer; cheap rent for the bank quarters; interurban service to Newton; boating on the Little Arkansas river; the seat of Friend's university and Fairmount college; a fine new union depot, with a viadok across the tracks; three skyscrapers, the Beacon building, the Boston Store block and Henry Schweiter's building; is the home of Vic Murdock and Henry J. Allen; the terminus of the K. C. M. & O. railway and some of its bonds; and, all in all, has many advantages that makes it ideal fur the location of a farm loan bank, but I cain't think of any of 'em just now.

Herb sez we don't need to worry about the location, that us farmers won't have to go to Wichita to transact our business, and that we kin do it all by mail. Well that's one comfort anyhow. The board is goin' to be lenient with us. Alright Herb, we'll quit kickin' now, just send on that money fur loans; that's what we're a-waitin' fur.

Herb struck me as bein' a mighty fine feller and us farmers kin go to him with any kicks on the system and he'll try to fix 'em up fur us. So let's holler if things don't go right. A reasonable amount of hollerin' is good fur the soul.

✦ ✦ ✦

Now there was another new felier I met at the Congress that I liked mighty well. He was O. F. Gardner, president of the Congress, a hog raiser by profession with a ranch in the San Luis valley, and also a preacher, but you wouldn't suspect him of it. He ain't got none of the earmarks of a minister and I guess that's why he is such a good one. Just lookin' at his face and judgin' him by his looks I'd say he couldn't be so awful orthodox. He ain't got none of that hellfire appearance but looks more like the mlik of human kindness, mixed with hoss sense and hard muscle.

He's livin' down to Princeton university right now, doin' work among the students, and I think the Congress ought to adopted resolutions of condolence, because he had to leave the San Luis valley. A man that wants to be a minister has to take up the cross and bear it, no matter how hard it is. Mr. Gardner was in President Wilson's classes in Princeton; our president has got lots of things to be proud of.

Gardner is the feller that got up the idear of us farmers givin' a acre of our crops fur them European sufferers. I'm fur it strong and while I hain't raisin' much except oats on the ranch I want to do my part. A acre of my oats wouldn't hardly make a night's feed fur a war hoss, or a bowl of mush fur a sufferer, so I'm goin' to give to the fund what would amount to about a literary acre in cash fur writin' this stuff fur Western Farm Life.

All them that ain't growin' crops but like me is a livin' offen the farmers is eligible to help in this acre war relief campaign at the rate of about $50 per acre. That includes lightnin' rod agents, hail and farm fire insurance agents, farm account book agents, farm paper solicitors, seed and nursery stock dealers, cream separator agents and such other predaceous insecks and parasites. Come thru fellers and let the committee know what you-all are goin' to do. Put me down fur fifty dollars, Mr. Hover, and no jokin' about it.

I ain't never been to Europe and since August 1914 I ain't been bothered with a desire to go, and I ain't takin' no pussonel part in the war. I'm too busy to say whether the Kaiser or King George ought to be licked, but my disposition would be to lambast both of 'em and all the other crowned and uncrowned heads that is takin' part in this rumpus. But when it comes to sufferin', it's another thing. Then I ain't neutral; I'm fur all them that suffers. I don't care whether they is Belgiums, Frenchers, Rooshuns, Germans, Turks, or them Tootons we read so much about in the headlines. Don't let 'em starve. They didn't start the war and they'd quit today if their governments would let 'em. It's allus the innocent that suffers the most and sufferin' wipes out all lines of color and nationality. Let's show what us farmers kin do fur humanity. Sign your name to the coupon on page 3 of this paper and send it to me, or to the editor, and we'll see that the committee gits the name and tell you-all about the details of the plan.

Next time I'm goin' to tell you-all about the stock show. Last fall when me and Fred was skiddin' around over the plains in Fred's auto he promised me a pass to the show if I give him a good write-up. Well I went and done it and he's come thru with the pass, which I'm a usin' at the show. I sure feel to home among the cattle, hosses, sheep and pigs and don't enjoy nothin' more than a chat with a purebred Shorthorn or Hereford. Them animals talks to me just the same as they talks to each other, and in the next number I'll tell you what they said.

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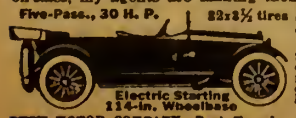

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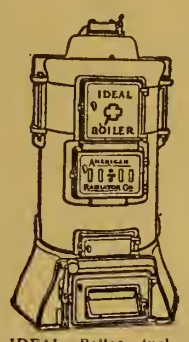

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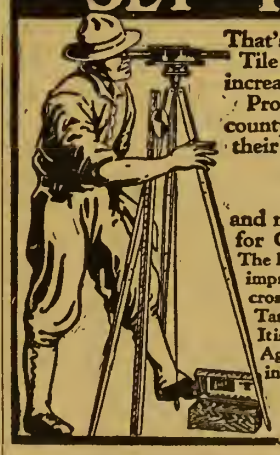

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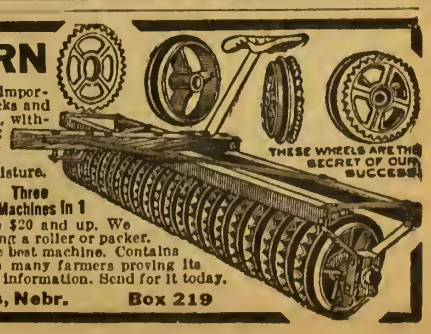

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With the County Agriculturist

ITEMS OF INTEREST FROM THE FIRING LINE

SPECIALIZED farming needs specially trained men as county agriculturists. To meet this need most of the agriculturists in the Rocky Mountain states, in addition to general farm training, have some line in which they can qualify as experts. Thus when Fremont county, Colorado, decided to take advantage of the provisions of the Smith-Lever law, the fruit industry being dominant in that county, it was necessary to get a man who knew something about horticulture. R. R. Jeffries, who was employed, is a graduate of Colorado Agricultural college, class of 1910, with a degree of B.S. in horticulture. Upon graduation Mr. Jeffries took up orchard inspection work in the Bitter Root valley, Montana, where he remained two seasons.

After this practical experience he decided to take post graduate work under Prof. Wendell Paddock at Ohio university, Columbus, where he was made a student assistant in the horticultural department.

In 1913 he was appointed assistant horticulturist at the University of West Virginia in Morgantown, where his work was divided between the experiment station and the extension department. There he remained until last June, when Fremont county decided to engage an agriculturist who was also a horticultural specialist.

R. R. Jeffries, Fremont County

Mr. Jeffries has taken hold of the work with zeal and energy, and while his time of service is yet too brief to permit of listing a record of accomplishments, he finds farmers and fruit growers ready to co-operate with him in building up the agricultural industry of the county. This good will, coupled with his knowledge and experience, insures the success of the work.

The practical value of Boys' Pig club work receives eloquent testimonial in the following letter from the father of Vern McElhaney, a Wyoming club member, as published in the Wyoming Farm Bulletin:

"Club work has been a great help to educate my son in the most economical method of producing pork. He is now very much interested in other lines of livestock. He insisted this fall that I turn my steers on a 16-acre field of corn to harvest it. I followed his suggestion with very good results. There is little waste in such a method.

"Vern is planning on keeping his female pig over next year to see how much he can make out of his $2 invested. He is urging boys to take up the club work this winter. He is also looking for a registered pig for next year's work. My best wishes are that all the club workers have a good season next year and do their best to succeed. I also thank you for the interest you have taken in Vern to get him interested in his work.

"Yours truly,

"J. A. McELHANEY."

Preston Wagner of Dietz, Sheridan county, Wyoming, has been declared winner of the state championship in the boys' pig clubs of Wyoming. He made a net profit of $13.99 on his pig and crop. He fed beardless barley of his own raising together with skim-milk, bran and shorts. The barley was hogged down. The pig made a total gain of 121.5 pounds from May 20 to September 9. Early in the season the animal was put on alfalfa pasture, with skim-milk and a medium grain ration, foraging 93 days out of 112. In spite of high prices of grain the gain was made at a cost of 4.8 cents a pound. The award was made at the state fair against keen competition.

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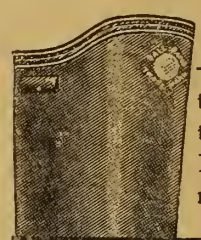

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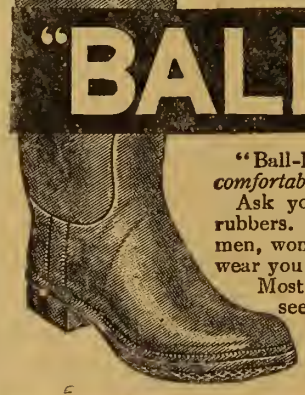

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The Western Farm Life Service Bureau

Our readers are invited to make generous use of the Query Department. Any questions pertaining to animal husbandry and general agriculture will be cheerfully answered. You are also invited to write us any experience that will be of interest to the farmer and stock grower.

In questions relating to diseases of live stock, you should be very explicit in descriptions and in autopsy findings, if such have been made.

Planting Corn

Which do you consider the best method of planting corn in Cheyenne County? To list it into solid ground, or to plow deep in April, following the plow closely with the subsurface packer, then plant during May with corn planter, using furrow openers so corn is planted in bottom of furrows. Please bear in mind that this land is liable to blow if plowed in the fall.—L. R. B., Cheyenne Co., Colo.

E. R. Parsons, the most practical and reliable dry land farmer in the world, insists on plowing deep in the fall for spring planting and in the early spring for fall planting.

The best success in growing corn on dry land has been made thru the lister. List your ground deep in the fall, and you will find that the moisture will be conserved and that the soil will not blow to any extent. In the spring, level the ridges and list them out for planting. This puts your corn down where it will not dry out so easily. Give it intense cultivation in order that you may conserve the moisture. If you have not prepared your soil for spring planting, I would suggest that you plow your land deep as early as you can get in the field in the spring and then list it in order to get your corn down so it will not dry out so easily. Where early fall and early spring plowing is practiced, the soil will pack itself and the use of a packer is unnecessary.

Transplanted Wild Grapes

Why will the wild grapes, such as grow along our creeks, never bear fruit after being transplanted?—W. H. H., Pueblo Co., Colo.

It is not known by people generally that the wild grapes are often sterile—that is, some grape vines will produce only pistillate flowers, while others will produce perfect flowers. In a case where a wild grape vine is transplanted that bears only pistillate flowers, there is no pollen to pollinate the pistils and no fruit will result. Hence a person runs a chance in digging up a wild grape vine without knowing whether the plant in question has perfect flowers or not.

In the case of cultivated grapes, these are all propagated from cuttings and from bearing vines, and hence are productive.

It would be much better for persons interested in the growing of wild grapes for fruit to take cuttings of the wild grapes that are producing fruit and grow vines from these cuttings.—E. P. Sandsten, Horticulturist, Colo. Agricultural College.

Ration for Hogs

I am raising and feeding about a car of hogs a month. Run them on alfalfa pasture during summer and have to feed grain mostly during winter. Would like your advice on cheapest feed. Corn costs about $1.90 per cwt. Bran and shorts including the low grade flour, $1.50 per cwt. Alfalfa hay, about $10 per ton, and meat meal $2.75, a slaughter house product from Armour & Co. claimed to be 60 per cent protein. Would the meat meal be cheaper than corn and would it be a good feed for young hogs to grow on?—J. J. T., Colo.

Your best ration made up from the feeds named, will be a combination of corn with one of the other feeds. Bran is eliminated of consideration from shorts at the same price, as shorts are a much better hog feed. With the prices named, there will not be a great deal of choice as to whether alfalfa or meat meal is used. It will be more a question of ease of securing the product. If the hay must be bought and hauled to the place, I would advise the use of meat meal or shorts. If you have the hay on the place, it can be fed in open racks, and we will be glad to send plan for such feeding rack. Where meat meal or tankage is fed, use one sack tankage to nine sacks corn. Where shorts are fed, use one sack shorts to two of corn. The meat meal or tankage makes a very good feed for growing young hogs. Do not feed it too heavily to sows heavy with pig—we prefer the shorts for that. The meat meal for younger hogs possesses the advantage of being in a very concentrated form, and the cost of delivering it at the farm is small on that account. A 60 per cent tankage costs, at the price named, much less per pound of protein than the shorts. You should not try to replace corn with tankage, but should balance up the corn ration by the addition of tankage.—G. E. Morton, Head Dept. State Dairy Com., Agricultural College.

Cow Gives Bitter Milk

I have a cow 9 years old that is giving bitter milk or the milk makes bitter cream and butter. She is fed nothing but the best of alfalfa hay. This cow was the same way last winter until turned out on grass in spring, when this condition disappeared. She was fresh in November. Can you offer any suggestion as to cause or treatment?—J. C. Mc., Colo.

The chances are that the difficulty with the milk from your cow is due to bacteria present in the barn getting into the milk thru dust, developing a bitter taste in the milk. This is the usual source of bitter taste. One can tell whether such is the case by knowing whether the bitter taste is found in the milk when freshly drawn. If not, then wash down the interior of the barn thoroly, see that all milk vessels are thoroly sterilized with boiling water, and that the room in which the milk is kept is disinfected. Where the bitter taste is in the milk when drawn it is usually found that the cow is far along in her lactation period—some cows giving bitter milk at that time. Or else feed is being given that gives a bitter taste. It is much more likely that the bitter taste comes in after the milk is drawn. If the bitter taste does not appear until the cream begins to sour, you should secure a culture of lactic acid bacteria, known as a starter. This can be secured usually from any creamery, or a drug store can order it for you. Ask for butter starter or butter culture.—G. E. Morton, Head Dept. State Dairy Com., Agricultural College.

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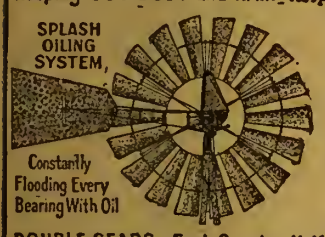

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What is a Cow Worth?

There are few dairymen and farmers who have made a close estimate of the annual cost of keeping a cow. For this reason there are found on nearly every farm and in many dairies, cows that are a liability instead of an asset; cows which are fit only for breeding and the slaughter pen, but which are receiving the same care that is given the good milk producers.

The Michigan Farmer gives the following results of an interesting experiment by Prof. A. C. Anderson of the Michigan Agricultural college on 75 herds consisting of 444 cows that were producing market milk and the experiment was carried on during a period of two years.

The following are the average fixed charges per cow per year:

Man labor per cow per year	$28.43
Horse labor and handling milk	15.15
Cash sundries, (articles used within the year)	1.86
Veterinary services	.93
Charges on buildings	9.57
Charges on equipment	.50
Added earning power	6.00
	$62.44
Less manure (11⅔ tons at $1.50 per ton)	$17.50
	$44.94

Interest Taxes and Depreciation Charges on Investment in Cow

Interest on cost at	6 % per year
Taxes on cost at	1 % per year
Depreciation on cow at	10% per year
Total	17% per year

cow, "What are you worth? Am I working for you or are you working for me?" Find out where you stand in this respect and stop the loss at once.

Dairy Commissioner's Report

Excellent work has been done during the past year by the Colorado State Dairy Commission, headed by Prof. George E. Morton. The report of R. McCann, deputy dairy commissioner to his chief, contains the following statistical material:

Twenty-five districts surveyed and meetings held for purpose of possible extension of dairying, by creamery, condensary, ice cream factory, or cheese factory building, Creamery Promotion company was opposed at one place, where cream supply was too irregular and insufficient to warrant the building of creamery. One cheese factory and one creamery have been directly aided in building and one creamery remodeled and started operating after a lapse of seven years' idleness. Two marketing associations formed for purpose of standardizing and improving products of local creameries, and marketing of surplus butter.

Personal work has been done among farmers and creameries for improvement of quality, as well as increased and standardized production.

Increasing production of cheese in the state has been encouraged by working for better quality. Five new cheese factories have started in the last year.

Supervised the selection and placing of eight carloads of good dairy cows among farmers, also placing a number of bulls for grading up herds. Gave aid and information among farmers of southwestern and western part of state on silo building, dairy barn and milk house construction.

One hundred and thirty-six meetings were held with a total attendance of 8,808.

The organization of one cow testing association has been completed, while another is still under way.

Three hundred and thirty-eight station inspections have been made for the purpose of improving quality of cream received, improving and requiring methods of handling cream and checking the testing work done by op-

To Determine the Value of a Cow

To pay 10 per cent depreciation and 1 per cent taxes and 6 per cent interest on investment. Calculations based on 3½ per cent milk at $2 cwt.

Value of Cow is	When Feed Consumed Amounts to $40 lbs. milk	$50 lbs. milk	$60 lbs. milk	$70 lbs. milk	$80 lbs. milk	$90 lbs. milk	$100 lbs. milk
$ 60	4,757	5,257	5,757	6,257	6,757	7,257	7,757
70	4,842	5,342	5,842	6,342	6,842	7,342	7,842
80	4,927	5,427	5,927	6,427	6,927	7,427	7,927
90	5,012	5,512	6,012	6,512	7,012	7,512	8,012
100	5,097	5,597	6,097	6,597	7.097	7,597	8,097
150	5,522	6,022	6,522	7,022	7,522	8,022	8,522
200	5,947	6,447	6,947	7,447	7,947	8,447	8,947
300	6,797	7,297	7,797	8,297	8,797	9,297	9,797
400	7,647	8,147	8,647	9,147	9,647	10,147	10,647

This table is based on $2 per cwt. per 3½ per cent milk. How is the value of the cow determined? Suppose you had a cow that cost $60, and she ate $70 worth of feed in one year. You would, to determine the value of the cow, multiply $60 by 17 per cent, which will equal $10.20—the amount of depreciation, taxes, and interest on the cow. Add to this the cost of feed for the cow for one year; also the fixed charges—$10.20 plus $70 plus $62.44 equals $142.64, the total cost of the cow for one year. From the cost of the cow, we will deduct a credit for manure at the barn, of $17.50 (11 2-3 tons at $1.50 per ton), which will leave $125.14. Dividing this by $2, the price of milk, we get 6,257, the number of pounds of milk the cow must give to be worth her cost of $60.

This data enables the dairyman to take a very close inventory of the cows he may have to feed and care for this winter, or any other time.

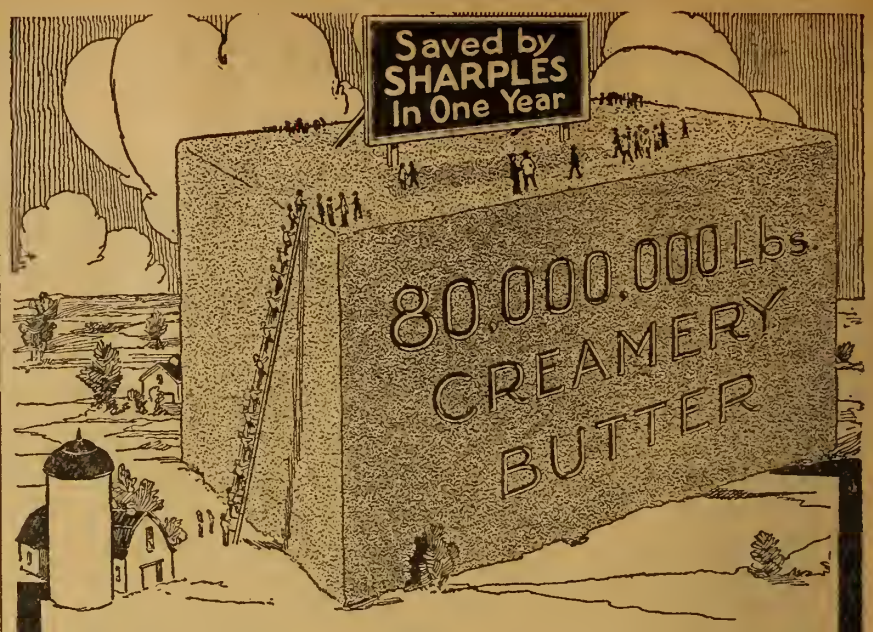
Example—A cow giving 6,927 pounds of 3½ per cent milk, eating $80 worth of feed. How much is she worth? Multiplying the number of pounds of milk by $2, the price per cwt., gives $138.54 as the gross proceeds of the cow for one year. From this sum subtract $80, the cost of feed, and $44.94, the fixed charges. This will leave $13.60, which represents the depreciation of the cow 10 per cent; taxes one per cent; interest on the investment, 6 per cent, or 17 per cent of her value. Dividing $13.60 by 17, we get 1 per cent of the value of the cow, or .80. Multiplying by 100, we get the value of the cow, or $80.

This data can be used in every case, no matter what the per cent of butterfat, the cost of feed, or any other item that may enter into the keeping or handling of a herd of dairy cattle.

In this experiment the value of the progeny was not taken into consideration. In the greater part of the farm herds the calf crop is the most profitable feature of dairying.

If this method were reversed and the unprofitable milkers weeded out and replaced by good producers that would place the balance on the right side of the ledger, there would not be so much discouragement in dairying and it would not be so difficult to interest the boys and girls and keep them from leaving the farm.

In consideration of the high cost of feed and labor, it would be well for farmers and dairymen to ask of each



The height of this print of 80,000,000 lbs. of butter is 90 feet —its length 180 feet. An average loss of 10 lbs. of butter per cow by all separators *except Sharples* causes this appalling yearly cream loss in the United States alone. If all separators were Sharples this immense pile would be *saved* annually. For this reason: Sharples is the *only* separator that skims clean regardless of speed. Look back over your past experience with separators. Many a day you determined to turn at top speed and not lose cream. But unconsciously, little by little, you slackened and *lost cream.* That separator was not a

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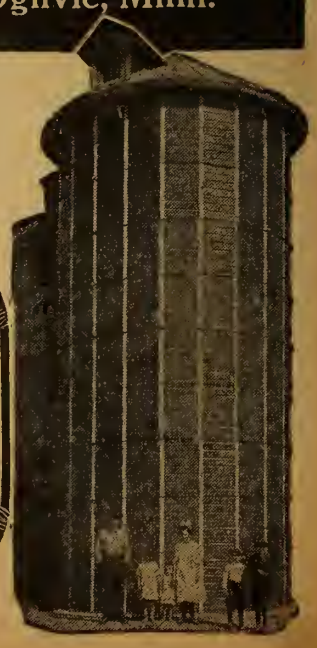

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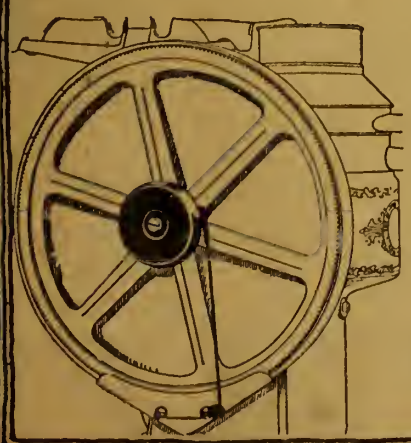
There is a De Laval agent near you who will be glad to explain all the improvements and advantages of the NEW De Laval, and who will set and start a machine for you on your farm and let you try it for yourself.

If you haven't the spare cash right now, that need not stand in the way of your having the use of a NEW De Laval the rest of the winter. We have an arrangement with De Laval agents which makes it possible for any reputable farmer to secure a De Laval on the partial payment plan—a small payment at the time of purchase and the balance in several installments—so that your De Laval will actually pay for itself while you are using it and getting the benefit from it.

Why not see the nearest De Laval agent at once? If you do not know him, write to the nearest office for any desired information.

Every NEW DE LAVAL is now equipped with a Bell Speed-Indicator



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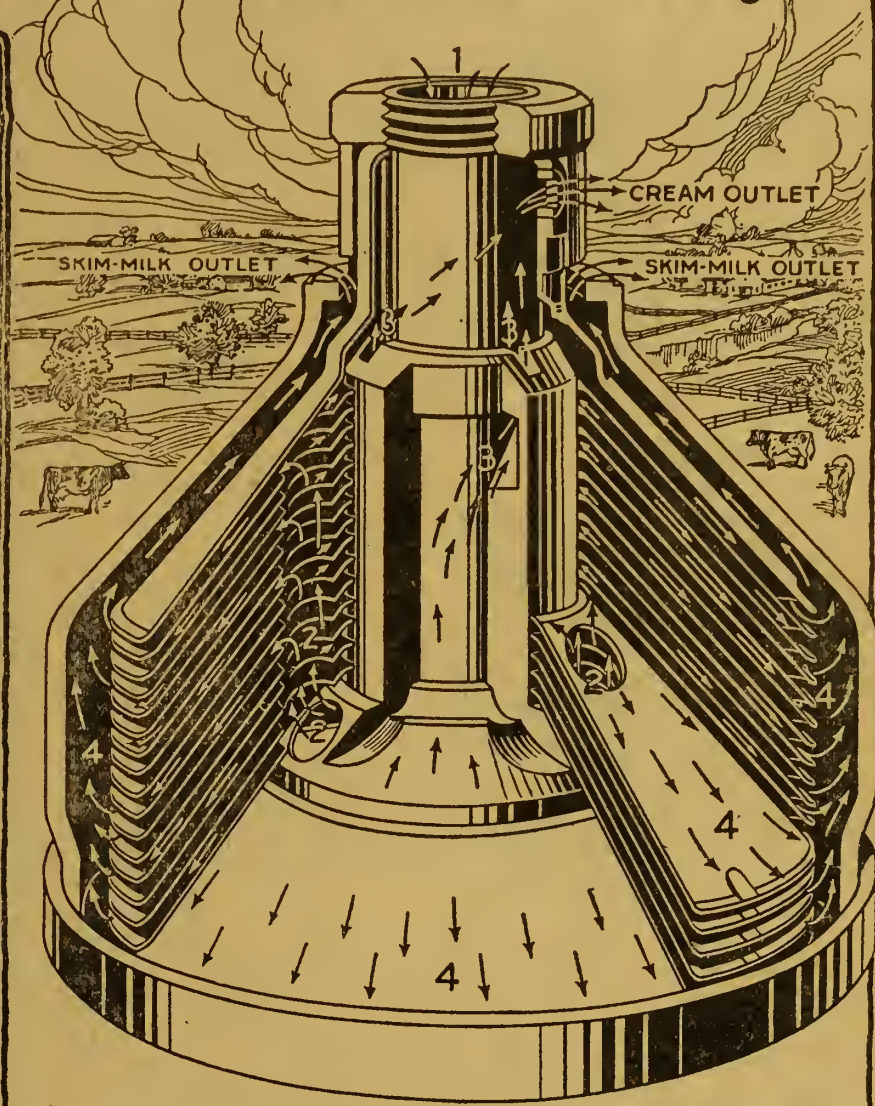
Because nine people out of ten turn the separator handle too slowly and because this always means loss of cream and cream of uneven thickness, every cream separator should be equipped with a reliable speed indicator.

Every NEW De Laval is now so equipped. The De Laval Bell Speed-Indicator is simple. It is accurate. It is reliable. There is nothing to wear out or get out of order. No matter who runs your De Laval, the "warning signal" will tell you when the speed is not right. You hear it and do not need to see it.



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Some of the points of superiority of the NEW DE LAVAL

The New De Laval bowl design and the new method of delivering the milk into the discs give increased capacity without increasing the weight or size of the bowl or increasing its speed. The incoming whole milk is delivered beyond the cream wall, and this, in conjunction with the improved design of the bowl, makes possible closer skimming than ever before, especially under the more difficult conditions of separation, such as skimming a very heavy cream or separating milk below usual temperature.

The much lower speed of De Laval than other cream separators (in most cases from one-half to one-third less) insures minimum wear of gears and much longer life of the machine.

The New De Laval concave-bottom, self-centering bowl is so designed and so supported by the detached spindle that it will run true and do perfect work even after long wear, the great importance of which every separator user will appreciate.

There are fewer discs in the New De Laval bowl, and all discs are unnumbered and are interchangeable.

By reason of its simpler construction and the fewer number of discs, the New De Laval bowl is more easily washed and cleansed.

All New De Lavals are automatically oiled, every moving part of the machine being bathed in a constant film of oil. There are no oil holes anywhere on the machine, and the sight feed oil cup on the top of the frame provides for a constant supply of fresh oil.

The gears, pinions and other moving parts of the De Laval are exceedingly simple in arrangement, substantial in dimensions and always interchangeable.

The De Laval tinware is sturdy and heavily tinned, well suited for long and hard wear, and easy to clean.

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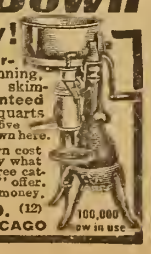

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erators, so as to insure square dealing among all concerned.

Two hundred dairies inspected for protection of reliable dairymen against the unfair competition of slovenly and unreliable dairymen, and for increased production, herd improvements and up-to-date care and management.

Oleomargarine sales have been looked after; on proper sealing of packages by manufacturers, and correct stamping and labeling by retailers and wholesalers. Process butter has also been kept in line by seeing that all sales made have been under label and stamp.

One hundred and four tests of dairymen's milk made; tests include analysis for butterfat, specific gravity, sediment and adulterations. A large number of butterfat tests have been made on churning cream, both in laboratory and field. One hundred and fourteen checks on testing done by station operators; 74 checks on testing done by creameries; 78 inspections of creameries; 11 cheese factories.

The report continues, giving details about prosecutions for violations of the law, examinations, literature distributed, letters of inquiry answered, etc., showing that the department has been exceedingly active and that much has been accomplished for the advancement of the dairy industry. Detailed figures on the state's dairy production from Commissioner Morton's report follow:

Creameries in state making butter, 75; plants making cheese, 16; process butter plants, 2; oleomargarine manufacturing plants, 1; ice cream plants, 45; cream receiving stations, 290; condensaries, 4;. Value of year's building in dairy product manufacturing plants, $216,985; value of all dairy product manufacturing plants, $1,402,560; value of dairy products made by commercial plants, $4,930,603; percentage of increase in dairy products manufactured, 37 per cent.

Accidental Abortion

I have a 3-year-old Holstein cow that lost her calf about 30 days before time for it to be born. The calf seemed to be fully matured but was dead. The cow seems perfectly healthy and in very good shape. She had no trouble calving and cleaned in good shape within a few hours after the calf was born. The afterbirth was covered with round white oval-shaped spots about the size of a dollar. Is this contagious abortion? If so, what is the treatment?—W. N. M., Morgan Co., Colo

Your diagnosis of the case points very strongly to accidental abortion. There is nothing that can be done at this time for your cow, and it is probable that she will get all right and become a good breeder.

Contagious Abortion

I have a Jersey cow that has had three calves. The first and second came 10 days ahead of time; both lived. The third came 20 days before time and did not live. Can you tell me the trouble and a remedy?—T. A. J., Colorado

The first two calves coming 10 days ahead of time is lacking in significance, for the period of gestation is variable. The third calf coming 20 days before time may mean contagious abortion or abortion by accident. Again, all of the calves coming prematurely, may have been caused by some physiological disturbance which has become chronic or from some pathological condition, like a tumor, which by irrigation causes a premature expulsion of the fetus. I strongly suspect contagious abortion. If not caused by the specific germ of contagious abortion, she will probably carry her calf to full maturity the next time, or she may not; there is no way of telling.—G. H. Glover, Colo. Agricultural College.

Death Due to Bloat

Would you kindly tell me if well-cured alfalfa hay that has got a little snow on, would do calves any harm? I had about nine calves in my barn and I fed them in the morning with alfalfa hay, and about 11 o'clock in the forenoon one of them was dead, and it appeared to be bloat. It bled at the nostril and at the rectum. I would like to know what the cause was.—H. B., Colo.

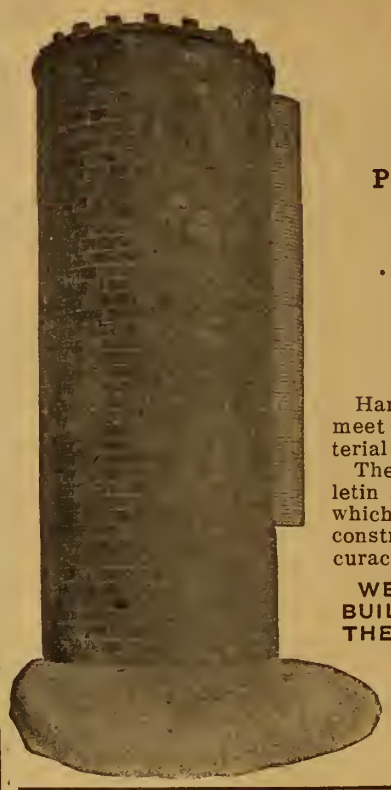
Alfalfa hay that has snow on or damp from rain is likely to bloat stock. It should always be fed cautiously. The death undoubtedly was due to bloat. Sometimes a very leafy hay will gather enough moisture from the atmosphere, even tho it is under cover, to cause bloat.—G. E. Morton, Head Dept. State Dairy Com., Agricultural College.

Probably In Calf

I have a well-bred, 2-year-old Jersey heifer which has been with cattle since early last spring. Had several male critters in the herd and saw her served as early as the first week in May. She showed signs of springing and looks as if she would have a calf about February, and yet she comes in heat about every 21 or 22 days. I would be very glad to have your advice in regard to my heifer.—D. E. W., Colorado.

A pregnant cow will sometimes show in heat, altho it is rare. Feel for the calf in the right flank, just after letting her drink some cold water. If you can feel the calf stir, you are sure she is safe in calf, and should not let a male serve her.

THE PERFECT SILO



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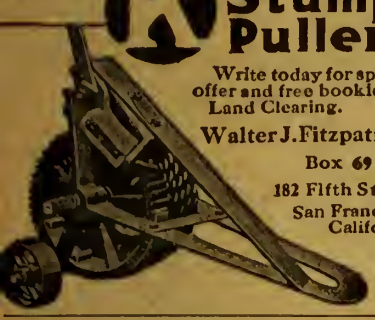

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LEGAL QUESTIONS

The following questions regarding legal matters have been answered by Peters & Barker, Attorneys, Equitable Building, Denver, Colo.

Can Use the Ditch

I filed on a piece of land and have lived on it two years, according to law. This piece of land has some buildings on it that were there when I filed on same. They were put there by a sawmill outfit before I filed on it. The houses were put on the land in 1907, and I filed on the land in 1911. The sawmill company shut down and has done nothing to the work since 1908. I lived there with my family last year and this year and am making it my home. Raised a good crop this year. I want to know if I have a right to live in any of those houses on my land or not, and I want to know if I have a right to use the buildings for whatever I may need of them. This company, the best I can make out, is sending the doctor who was their company physician at that time to me to see if I will sell my place, so I suppose they want to start up again and want me out of their way, but I don't want to sell my improvements. I want my little home, and I do not want to be bothered to death by them, either. Please tell me what to do. Don't those houses or anything else on the land belong to me since I have filed on same? In case the company comes up here and tries to take those buildings what shall I do? Also I have the main ditch for irrigation running out of the neighbor's uncleared land. The dam is about two or three hundred yards on the inside of her land. It joins my land up the stream. I got her permission a year ago, in the fall of 1915, to clear the ditch and have it ready to run water in, in the spring of 1916. In the spring, real early, she filled the ditch up with sod and rock and chunks of wood, and forbade me to come inside of her land. She said she would not let me run water in that ditch because I had refused to let her have a road thru the middle of my ranch. Has she a right to keep me from using that irrigating ditch? Please tell me what to do about it.—Mrs. I. F., N. Mex.

If you have had filing on this land since 1911 and have used these buildings for the last five years, the court would consider that the saw mill company had abandoned these buildings, so when they come to take them away, you can refuse to let them remove them from your land, and the only way they can get them will be to replevin them. Then you can have your attorney look after the defense for you. As to the ditch, if she refuses to let you use the ditch, the only thing you can do is to consult your local attorney and start an action against her for obstructing this irrigation ditch.

Division Fence

A bought a tract of land and 12 years after date of purchase had it resurveyed according to description furnished by party from whom the land was bought. According to the resurvey, B's fence, which was built some 25 years ago, is about 30 ft. on A's land. B says he will not permit the fence to be moved or pay half of the expense to have the line surveyed again. The surveyor who surveyed the land says he cannot guarantee that his survey is correct, as the lines do not run perfectly North and South and East and West. What recourse has A? Can he place the fence on line according to the resurvey and let B sue him, or can he force B to pay his part of expense to have it surveyed again, and a permanent line established?—V. J., La Plata Co., Colo.

Unless B agrees to have the division line resurveyed, there is no way that you can force him to pay half the expense thereof. What you should do is to first be sure that you can bring the matter to issue by moving this fence over on the proper line. However, if this division fence has been in its present location for a period of over 20 years and never been disturbed, and he has cultivated the land and had possession of it all this time, you run into a very serious question as to whether he has gained title to the strip by adverse possession, and the question could only be tested out in a lawsuit.

Ownership of Straw

I rented a neighbor's place and raised a crop in 1915, crop rent. In stacking the grain it was stacked in separate places, so as to have the straw divided and for the convenience of the landlord my part was not hauled away, and he now claims it, saying I had straw there last year, but have none now. Can he hold the straw?—C. C. Branch, Weld Co., Colo.

Your rights would depend entirely on your contract. If this part of the straw belonged to you under your contract for this year, all you will have to do is to identify the straw, and the landlord cannot hold it

Can Take Additional 160

I made homestead entry for 160 acres in U. S. Land Office at Clayton, N. M., Union Co. May I have right to make another entry under homestead law somewhere else?—A. S., Trinidad, Colo.

If your original homestead of 160 acres is land designated under the Dry Land Act, you will be allowed to enter 160 acres additional of similar land, providing your land is of the same character and is in one of the states where the land has been designated as subject to this act. Apply to your local district land office for circular No. 486, which will give you full particulars.

Heirship on Land

Will you kindly inform me whether the law regarding the advertising for heirship on land was enacted prior to April 12, 1909, or was it enacted since that time. The writer had this matter thru the regular legal channel at the above date to secure unincumbered title to his land, but now when I am about to sell the land they claim the heirship must be and in fact has been re-advertised, and they are trying to hold me for the costs.—P. R., Morgan Co., Colo.

The heirship law was passed prior to April 12, 1909. I could not answer the rest of your question without examining the proceedings in court. The chances are that some heir was left out, or there was a mistake made in printing is why it had to be re-advertised. Whosever fault it was in making the error, it would probably have to be advertised again if any error was made.

State Compensation Bureau

Who is the proper state or county official to resort to in regard to collecting redress for injury received, such as doctor bill, wages while disabled; also, what is the address of said official?—E. S., Morgan Co., Colo.

Assuming that your injury occurred while working for some person or corporation where compensation would be provided by the state law for such injury, then you should address the State Compensation Bureau, State Capitol, Denver, Colo.

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Make the NEW and **Clean the OLD** with the MARTIN Ditcher, Dyker and Grader. Makes or cleans irrigation or drain ditches up to 4 feet deep—any width. Makes two to three foot dyke or levee; grades roads. Works in sand, rocks, gumbo or clay—wet or dry—on side hills or level ground.

Reversible, Adjustable, No Wheels, Cogs or levers. No breakable parts. All steel. 2, 4 and 6 horse sizes. Guaranteed to do more work than 50 men with shovels. Cost low, upkeep nothing. Over 10,000 satisfied customers everywhere. Write TODAY for catalog, full particulars and introductory offer on new 1917 models.

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ONE OF A THOUSAND
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10 DAYS TRIAL

OWENSBORO DITCHER & GRADER CO., Inc.
567 Evans Block DENVER, COLORADO

A Chapter on Deep Plowing

(Continued From Page 7)

If the top two or three inches of the seed bed is too solid, it prevents quick absorption and much water may be lost by evaporation or run off. On account of the water being held near the surface the crop results from an overpacked seed bed are usually, unless the season is a very wet one, a good start but a poor finish.

May Become Overpacked

When the seed bed is plowed in the fall for spring planting it may easily become overpacked by heavy precipitation for such crops as corn, and sorghum, etc., which do not require as much compaction as small grain crops. In this case the seed should be listed in across the plowing which sufficiently loosens up the soil, and assures the most favorable conditions for a full yield.

The Tilth of the Seed Bed.

When ground is dry plowed it is always very loose and cloddy. It is impossible to raise crops on it for it is over aerated. As soon as dry weather commences the air gets in its deadly work by carrying away the moisture from the roots and the crop burns out. Sometimes a man will plow good and deep when the soil is medium dry and then harrow it down and plant immediately to crops. The farmer who does this is very apt to say "Deep plowing does not pay."

Dry plowing in the fall can usually be harrowed and disked alternately in the spring so that a seed bed can be made which will be fine enough to prevent over aeration and thoroly mulch the subsoil, but not too compacted to hinder absorption. In the spring of the year when the soil is in good condition for working, the best tilth is obtained by following the plow with the harrow; but for the man with one team who cannot do this, the next best idea is to unhitch the team every hour or so and take on the harrow.

Lessons From Maine for Western Potato Growers

(Continued From Page 5)

we lose in culls, and planting close eliminates large and overgrown potatoes and accounts for Maine, in New York and other markets, getting 75c to $1 per barrel over the regular price. It costs more to raise an acre of potatoes in Maine than in New York, but the yield is nearly double, so the cost per bushel is nearly the same, being 37 cents per bushel in Maine and 36 cents in New York, as given me by their colleges.

Last year Maine fertilizer cost $34 per acre—at present prices $38—and at that price the amount is very limited, so New York and Maine cannot increase their acreage very materially, so they all say.

Rancher—Where you can sleep? Great Scott, man, here are 10,000 acres; just pick out any blame spot that suits you and go to it.—New York Times.

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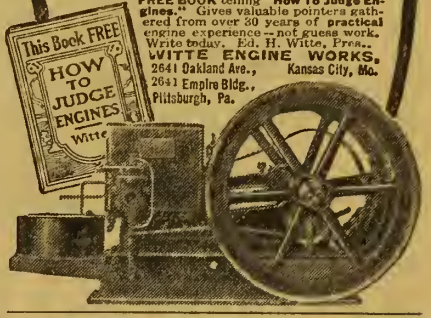

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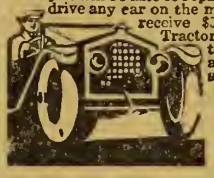

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The Farm Woman

The housewife who would reduce the cost of food must first of all know how to select the foods which are really cheap. That is, she must know which foods give the greatest return in nutritive value for the money spent. It is not enough to consider the cost of a pound or a quart or a dozen, according to Miss Hildegarde Kneeland in a lecture during Farmers' week at the University of Missouri; she must consider also the fuel value of the food, how much tissue-building protein is present, how rich it is in mineral matter. She will then find that the cheapest fuel foods are the cereals, especially cornmeal, wheat flour, and oatmeal; sugar, molasses and the cheaper syrups, cottonseed oil, lard, and crisco, the dried legumes (peas, beans, and lentils), potatoes and the cheaper grades of dried fruits. Since the greatest part of our food is needed for fuel, the economical housewife will use these freely. She will find that the cereals and dried legumes are also the cheapest source of protein, and with milk and cottage and American cheese can supply most of this tissue-building material. The more expensive protein foods—meat, eggs, and nuts—can then be used frequently. Mineral water can be obtained most cheaply from milk, whole cereals, potatoes, and dried fruits and legumes, and these can largely replace the fresh fruits and vegetables and eggs.

The possibilities of saving by buying in large quantities are usually overlooked. By ordering fats, oils, syrups, and baking powder in large cans, canned fruits and vegetables by the dozen, and several pounds of chocolate, dried fruits and legumes, nuts, cereals, etc., a very decided reduction in price is obtained. Often it will pay to buy fresh fruits and vegetables or dairy products direct from the producer, avoiding the great increase in cost which usually comes thru marketing the product. A co-operative buying club in any community will do a great deal to make buying in large quantities possible and will also help its members to learn how to spend wisely that large proportion of the yearly income which must be spent in food.

Menus at Different Costs

Menu 1, costing 50 cents a day for an adult. Breakfast—Oranges, cornflakes, powdered sugar, cream; bacon and eggs; graham muffins, butter; coffee, domino sugar, cream; milk for children.

Lunch—Nut and rice loaf; tomato sauce; spinach, cocoa; Parker house rolls, butter; baked apples, cream; cookies.

Dinner—Fruit cocktail; roast beef, gravy; roast potatoes; creamed cauliflower; celery, grape jelly, light bread, butter; macaroni ice cream, ribbon cake.

Menu 2, costing 35 cents a day for an adult. Breakfast—Baked apples, cream of wheat, granulated sugar, top milk; omelette; graham toast, butter; coffee, granulated sugar, top milk; milk for children.

Lunch—Nut and rice loaf, brown sauce; stewed tomatoes, cocoa; biscuit, butter; canned peaches; ginger wafers.

Dinner—Pot roast, gravy; scalloped potatoes; spinach; cold slaw; light bread, butter; bread pudding, jelly.

Menu 3, costing 25 cents a day for an adult. Breakfast—Stewed figs; oatmeal, milk, granulated sugar; sausage for man; graham toast, oleo; coffee, granulated sugar, milk; milk for children.

Lunch—Bean loaf with bread crumbs, brown sauce; ginger bread, apple sauce.

Dinner—Beef stew with potatoes; onions, and carrots; corn bread, oleo; baked custard (skim milk.)

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We can supply our readers with high-grade, perfect-fitting, seam-allowing patterns at 10c each, postpaid. Full directions for making, as well as the amount of material required, accompany each pattern. When ordering, write your name and address plainly, tell us the correct number and size of each pattern you want. We agree to fill all orders promptly and guarantee safe delivery. Address all orders to WESTERN FARM LIFE, Pattern Department, 14th and Arapahoe, Denver, Colo.

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Policy Reserves and Other Liabilities	$ 5,848.97	$124,695.31	$288,930.26
Capital Stock	117,648.00	219,900.00	254,756.00
Surplus	132,463.32	304,532.91	332,583.77
Total Liabilities	$255,960.29	$649,128.22	$876,270.02

Next annual statement will show assets of more than $2,500,000, with $17,000,000 insurance in force

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Ambrosia—Earliest and best blackberry; large, sweet and very delicious. King of Cliffs—Best of all black raspberries; bears all summer and fall. Everbearing Tree—Largest of all everbearing red raspberries; productive. Stand Pat—Largest and most productive of all everbearing strawberries. Marvelous and Caco—Largest, sweetest and best of all grapes. Oregon Champion and Carrie—Best of all gooseberries; reliable and productive. Perfection and Diploma—Best of all currants; sure croppers and reliable.

Our Catalog is free; send for your copy today. Tells all about them and all other standard varieties with prices that are inviting. The Catalog also describes the Pondrosa peach with other standard varieties.

Apples, Cherries, Plums, Hardy nut trees, shrubs, roses, garden roots, and everything for the fruit grower. Large, well rooted trees and plants give satisfaction and quick results.

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NEW 1917 WESTERN HUNDREDS OF VALUABLE CROP SUGGESTIONS

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A fine collection of carefully selected and successful varieties of Vegetable, Garden and Field Seeds, Grains and Grasses, Bulbs, Plants, Shrubs and Roses, that have always given satisfaction to Western Planters. We handle only best quality and give lowest prices. We make a specialty of Hardy Alfalfa Seed, World's Champion Marquis Wheat and Northern Grown Russian Oats that yield big crops. Send for our Catalog today. Sent only on request.

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introduced by us three years ago is now acknowledged to be the greatest new garden annual. It is a success everywhere, plants growing 2 to 3 feet, a pyramid of color, its many branches bearing great balls of wool-like substance and most intense crimson scarlet. Flowers develop in June and none fade before frost, ever brilliant and showy beyond belief. Seed per pkt. 10 cts., 3 for 25 cts.

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Everblooming Sweet William, a startling novelty, blooming in 60 days from seed, continuing all the season, and every season being hardy. Flowers large, colors exquisite—pkt. 10 cts.

These 3 great Novelties, with two more (5) for only 20 cts. See Catalog for colored plates, culture, etc.

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Greatest forage crop and drought resistant. Produces fine crop of hay—superior to Millet and equal of Timothy. Bartelldes' Sudan Grass Seed is a sure big yielder—from 2 to 4 tons of hay per acre and under irrigation as high as 10 tons per acre. BARTELDES' SUDAN SEED IS PURE—cleaned and recleaned. Scarce this year but we have a good stock. Order from headquarters. FREE Catalog of field and garden seeds—also special pink price list—send at once. 50 years of honest dealing.

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SUGAR, 19 lbs. $1.00

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GOOD AS CAN BE GROWN
Prices Below All Others

I will give a lot of new sorts free with every order I fill. Buy and test. Return if not O. K.—money refunded.

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Over 700 illustrations of vegetables and flowers. Send yours and your neighbors' addresses.

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Genuine comfort if you ask for and get—

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Beware of Imitations—name and trade-mark stamped on the sole.

ALFALFA

Prof. Hansen's wonderful Cossack Alfalfa is a big, vigorous, strong rooted variety well adapted for the most rigorous climates.

PROF. HANSEN'S COSSACK ALFALFA

I have tested it, tried it out under the most adverse circumstances, and can therefore strongly recommend the Cossack Alfalfa Seed to you. You sow your field once and for 30 years all you need to do is to harvest your crop and pocket your returns. I am making you a Special Offer of 10 lbs. Genuine Cossack for $15, and with every order I will present you with ½ bu. New Iowa 103 White Kherson Oats. Reserve your 10 lbs. at once. I will ship it at any time you specify, but order now.

For further information, send for my big 1917 160-page Catalog—it's FREE. Gurney Free Service Booklets also contain valuable information.

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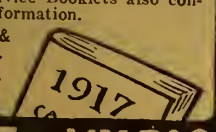

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Introduced into this country originally from China. A hardy, drought resisting, big producing millet. An early yielder. Investigate it.

Has been grown extensively in Western Kansas for years. Will grow anywhere any millet can be raised. Its great feature is its seed head which runs from 8 to 18 inches, producing as high as 15,000 seeds to a single head. Foliage is heavy, producing an excellent fodder, which cures readily. Investigate. Sow some this spring sure. Seed is limited, so get in your order early.

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Just a postal will bring it to you, free, postpaid. Also small sample packet for testing if requested. But, get our new seed book sure. It's chuck full of Garden, Flower and Field Seed bargains. It tells about our many new varieties, such as White Kherson Oats, Marquis Spring Wheat, Shrock's Kaffir-Sorghum. We are headquarters for Alfalfa Seed, as we are largest alfalfa dealers in the country. Get our prices first. Write for Special Bee Supply Catalog.

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Such Beautiful Flowers!

Asters, Calliopeis, Calla, Clematis, Chrysanthemum—all these beauties and hundreds more pictured, described and attractively priced in Bartelds' Big New 1917 Catalog of Field and Garden Seeds—just off the press. Drop post card for free copy. Plant Bartelds' luxuriant flowers—the kind that grow, bloom and delight. Write Today.

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COFFEE, 20c lb.

In 5, 10 and 15 lbs. sacks. Extra choice Bic Brand. Stores usually ask 7c to 10c a pound more. You can save money on hundreds of other items in our money-saving Grocery Catalog and new Big Book of Bargains. Just out. Write for free copy today.

GENERAL MERCANTILE CO.
"The Great Mail Order House"
727 S. Ninth St. OMAHA, NEB

Cut in sizes 34, 36, 38, 40, 42 and 44 inches bust measure. Requires 7 yards 36-inch material for 36-inch size. Percale, gingham, seersucker, chambray, lawn, gabardine, voile, poplin, repp, serge, taffeta and tub silk are nice for this style. The fronts of the waist are made with a coat closing, and are rolled, but in low-neck style. The skirt is a four-gore model, finished in lap tuck style at the center front. The sleeve may be in wrist length, finished with a straight cuff, or in short length with a shaped turnback cuff.

1945—Practical Set for the Little Ones. Cut in sizes 6 months, 1, 2, 3 and 4 years. Will require for the dress 2⅝ yards 36-inch material. For the drawers ⅜ yard. For the slip 1¼ yards for 2-year size. This model comprises a simple dress with round yoke, and long or short sleeves, a style of drawers, comfortable and practical, and a slip with added skirt portion at the back and with or without ruffle. Cambric, lawn and muslin are good for the slip. For the dress, batiste, lawn, cambric, percale, flannelette, challie or cashmere could be used.

9821—Ladies' One Piece Corset Cover. Cut in sizes 32, 34, 36, 38, 40 and 42 inches bust measure. Requires 1⅜ yards 36-inch material for medium size. Suitable for "all over" embroidery, lawn, batiste, cambric, nainsook, crepe or silk. The design is very simple and easy to make.

1970—Very Becoming and Comfortable Lounging Robe. Cut in sizes 34, 36, 38, 40, 42 and 44 inches bust measure. Requires 5⅝ yards 44-inch material for medium size. Figured crepe in blue tones, with trimming of matched blue satin, was used for this style. This model is cut with a waist in Empire style, and a broad collar shaped in points. Percale, lawn, dimity, cashmere, nun's veiling, crepe, flannel or flannelette are also good for this style.

1955—Ladies' Overall Apron. Cut in sizes 34, 38, 42 and 46 inches bust measure. Requires 6½ yards 36-inch material for 38-inch size. Percale, seersucker, gingham, chambray, lawn, alpaca or brilliantine could be used for this design. The back and sleeve portions are cut in one, and joined to the front in a deep armseye, and underarm seams. The fullness is held at the waistline under the belt.

Potato Growers Well Started on Crop Improvement

(Continued From Page 4)

sibly it will be doubled. The organization is under the direction of the extension department of the state university, the potato extension lecturer, by virtue of that office, becoming active secretary of the Wisconsin Potato Growers' association.

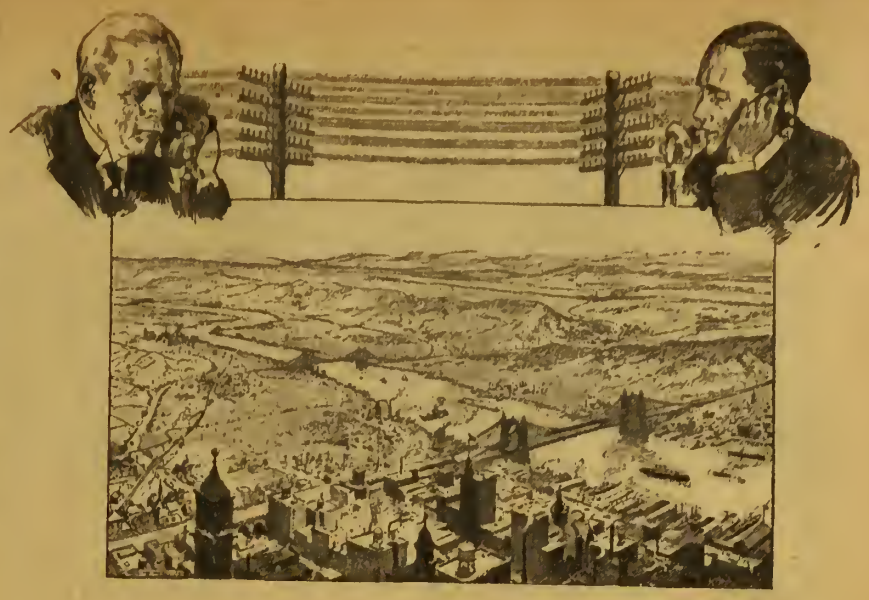
Co-operating with the state and the individual growers in potato improvement are the big commercial interests of the state—the railroads, land development associations, private land companies, bankers and others in business—whose prosperity, in certain sections of Wisconsin, is dependent upon the success of the potato crop, and who thus will benefit by better growing methods, standardization of varieties and general improvement that will increase the demand because of betterment of quality and improved marketing practice. Counties and districts in that state are adopting certain varieties as their standard, and growers aim not only at uniformity of variety but of type and size, so that the product of the potato fields of a given county or district will be known on the market by a varietal name that will mean something to the buyer besides "just potatoes."

Prof. Milward's second lecture was illustrated with slides that graphically set forth what Wisconsin is doing and that gave Colorado growers many ideas of value in the work which has just been started in this state.

President Sweet showed the motion pictures of the world-famous Carbondale district, which were taken by United State department of agriculture men on the Sweet ranch, and which are being shown all over the country as an example of ideal methods of potato culture, under a system of rotation. Humus and nitrogen are the soil needs of this western country, said Mr. Sweet, in introducing the pictures. On the ranch at Carbondale this is provided for by alfalfa, which stands on the future potato soil for three or possibly four seasons. The last season the final cutting is plowed under, thus adding the humus to the nitrogen which has been stored by the alfalfa plants. These are the methods that have brot such averages as 500 bushels per acre for seed plots, and hills having a weight of seven and one-half pounds of almost perfect spuds from one hill, as shown in the pictures.

Prof. E. P. Sandsten, head of the department of horticulture at the Agricultural college, gave the growers some things to think about. Certified seed, he declared, was not everything in potato production, cultural conditions and methods being possibly of more importance in maintaining type. His warning word was that, because of the market demand and high prices of the present winter, there would probably be more poor potatoes planted in 1917 than ever and that the industry would suffer if that were done. "We want fifty Colorado growers to produce certified seed," he said, in explaining the system of certification that has been adopted in this state.

The association went on record as favoring a state appropriation of $3,000 in aid of the co-operative work done by the state and federal governments on the Greeley potato station, under direction of Dr. Clark. The Farmers' congress later adopted resolutions endorsing this appropriation. Officers elected by the association were as follows: Lou D. Sweet, president; E. R. Bliss, Greeley district, vice president; R. A. Chisholm, San Luis valley, vice president; Dr. E. P. Sandsten, secretary-treasurer. Much of value was brot out in papers and discussions on various phases of the industry which cannot be given here because of space limitations.



A Bee-Line to Everyone

Straight as the bee flies and quick as though caught by lightning the voice in the telephone carries near and far over this Nation.

This marvelous instrument is the pre-eminent vehicle of speed and speech. Railroads cover the country, but your traveler often must alight with bag and baggage and change trains to get to a given point. Railroads reach cities, towns and villages. The telephone reaches the individual.

The telephone offers continuous passage for the voice and unbroken connections to the uttermost places because it is a united System co-ordinated to the single idea of serving the entire people of this country.

It has been a powerful factor, along with the transportation systems, in the magnificent achievements of the United States—helping to prepare the way where latent possibilities of mines, forests and farms were to be developed.

The continued growth of our national prosperity depends in a great measure upon the maintenance and continued growth of the utilities which furnish the means of intercourse and interchange. They are the indispensable servants of the individual, the community and the entire nation.

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WHY SEND YOUR MONEY EAST?

For thirty years we have supplied hundreds of Western people with all their Ranch and Home Supplies. Hundreds deal with us every month, with entire satisfaction. We can serve you just as well.

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Why send your money East? We give you standard, trade-marked goods at equal or better prices and save from one-third to one-half the freight and several days' time. Satisfaction guaranteed or money refunded every time.

Write for Catalog 59

BON-I-LOOK

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Singer Sewing Machines

Little used; guaranteed by this company for 5 years; all attachments. Beautiful drop head, dark oak; 100 to pick from; crated and shipped on receipt of price.

7-Drawer 66 Drophead, dark oak...$18
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54 Cloverdale Herefords at PUBLIC AUCTION

South Omaha, Nebraska, February 14, 1917

31 Bulls, from 15 to 20 Months Old. 9 Yearling Heifers. 7 Two-Year-Old Heifers. 7 Cows and Calves

It is with great pleasure that I present each lot represented in the beautiful illustrated catalogs, which are now ready for distribution and can be obtained by dropping a card to O. E. Green, Genoa, Neb.

There are in this sale nine bulls and eight heifers bred by Parsifal 16th, out of Beau Mischief dams, making a combination of the two great bulls, and we think the "nick" right in every respect. We would especially call your attention to Velvet Parsifal (she sells in this sale), which will be a great show prospect for the two-year-old class next year.

The twenty-three cows and heifers are all selected and there is not an inferior one in the lot; they are all of good ages to be profitable to buy.

The thirty-one bulls are the tops of all the bulls we raised in 1915, having repeatedly refused to sell a single one of them. Among them are great number of herd-headers, and we believe they will be one of the best bunches of bulls that will go thru any sale ring this year.

Every friend of good cattle is cordially invited to attend this Cloverdale sale, South Omaha, Neb., Wednesday, February 14. Sale held at South Omaha, Neb., because of better railroad facilities.

V. E. MILLER
FRED REPPERT
Auctioneers.

O. E. GREEN, Genoa, Nebraska

ALBECHAR FARM HOLSTEINS

Herd headed by Sir Juliana Grace De Kol, of world record breeding. We have recently acquired a number of Holstein females, so that our herd now numbers 160 head, from which selections may be made. We offer females from calves, up to full age cows, priced singly or by the carload. We have daughters and granddaughters of King Segis Pontiac, Parthenea, King Segis Pontiac, King Hengerveld, Model Fayne, Pontiac Korndyke, Pontiac Aaggie Korndyke, and Sir Juliana Grace De Kol; twenty-five A.R.O. cows included in the herd. Nine heifers bred to a son of Pontiac Korndyke and Polly Posch.

Address **ALBECHAR HOLSTEIN FARM**
ROBINSON & SHULTZ
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We are the largest producers of pure bred Hereford bulls in the United States. Our bulls are as well bred as the average that are registered and the prices are much lower.

The Tompkins Cattle Company
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Breeders of Pure Bred Herefords
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DENVER, COLORADO

Stallions and Jacks

One 2-year-old registered Jack and two yearling Jacks; all big, heavy-boned. One 2-year-old registered Percheron stallion. One Belgian stallion, grade. One standard-bred stallion. Colorado raised and acclimated.
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A GUERNSEY BULL

in a grade herd in Minnesota increased its production 24%.

Guernsey Grade Cows produce butter most economically.

It has that wonderful natural yellow color.

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"MURRAY'S Chester White Bred Sows and Gilts." 50 head bred and ready to ship. Write for prices. Everything cholera immune.
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JACK MEN, LISTEN

I have the largest 6-year-old jack west of the Missouri River for sale. Other bargains in Mammoth jacks and jennets.
Inspection Invited Satisfaction Guaranteed
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FOR SALE, PERCHERON and BELGIAN STALLIONS

All ages and prices. Pasture-raised and full guaranteed.

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Everything Registered
Stock for Sale
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Breeder of high-class Registered Jersey Cattle. Young bulls of serviceable age for sale. Breeding and individuality unexcelled. For pedigrees and prices address R. C. Robertson, Box 55, R. F. D. No. 1, Trinidad, Colorado.

Home of the Giants

100 Jacks and Jennets. We handle the big kind. Special attention to bone, foot and weight. All ages. Prices from $300 up. All registered, all guaranteed, as represented.
BRADLEY BROS., Warrensburg, Mo.
65 Miles East of Kansas City. Main line Missouri Pacific.

BARGAINS

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R. I. LITTLE
Good Block Des Moines, Iowa

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Imported and Home-grown mature stallions, ton and heavier, 3 yr. olds, 2 yr. olds, yearlings. Produce of 62 Imported mares and noted prize-winning Imported sires weighing 2235 lbs. and 2430 lbs. each. Farmers' Prices. Fred Chandler, R 7, Chariton, Ia. Direct from Denver

Home-Bred Draft Stallions

Your choice $500, with the exception of two. Also mares for sale.
A. LATIMER WILSON, Creston, Ia.

ABERDEEN ANGUS BULLS AND BERKSHIRE HOGS
Winners of 24 champions in 1914
See us before buying.
Sutton Farm Lawrence, Kans

Registered Shorthorn Cows and Bulls for sale
JAMES McGINN
R. F. D. No. 3 Boulder, Colo.

LIVESTOCK

It is a question with some farmers, at this time when all kinds of feed is higher than it has been for many years, whether or not it is profitable to keep their stock. With corn at $1, wheat near the $2 mark, and other feeds at proportionate values, many are inclined to sell both stock and feed.

A little study of economies would aid in making a material saving during the cold stormy weather.

A good part of the feed at this season goes to keeping up the animal heat of the body and if much of this heat can be supplied in the way of good warm shelter, there can be made quite a saving of feed and the animals kept in better condition at the same time. It is much cheaper and more humane to provide warm quarters for the stock than to allow them to shiver on the outside in the cold and give them an extra allowance of feed in order to keep up their strength and animal heat.

The indications are that stock of all kinds will continue to increase in value and it would not be good business to sell at a sacrifice now and pay an advance price in the spring, simply to save feed and shelter.

Hogs should have the same care and attention at this time as is given the horses. On account of their scarcity and the big shortage in corn, hogs will be good money makers for some time to come and warm shelted and a balanced ration will be fully justified in the returns that may reasonably be expected. High grade or pure-bred stock will respond more readily to special care than will the scrub and the same attention will bring much greater profits.

There are also other features to be considered in giving the stock good shelter and care. You get an incrased quantity of manure which can be scattered where most needed. Your stock becomes gentler and easier to handle and the labor is proportionately decreased. From the standpoint of profit and loss only, it pays well to provide warm shelter, give an ample amount of feed and keep the stock in a thrifty condition.

National Livestock Convention

The National Livestock association, at its recent annual meeting at Cheyenne, Wyo., made a vigorous protest to any increase in grazing fees on the national forests. These protests were made in the presence of Secretary of Agriculture Hon. David Houston, and in many respects were more vigorous and forceful than respectful. Many stockmen stated that they were the victims of an almost unbearable burden of official forestry regulation already and to increase the fees that were already large enough, would mean a confiscation of the grazing lands. They felt that the western states are entitled to the same square deal that was enjoyed by the central and eastern states in their early settlement and that to put this additional hardship on the pioneers of the west was out of all reason.

The resolution on grazing fees declared that permittees already are paying full value for the grazing privileges they hold; that the fees paid are one-third greater than the cost of administering the grazing operations; that the advance in fees is a "complete reversal of policy, which we very much deplore," and that, in the belief of the committee, the reasons advanced for the proposed raise are insufficient; wherefore, "we do most vigorously and unanimously protest against any raise in the fees now charged for grazing on the national forests."

"It is our opinion that if any raise in the grazing fee be insisted upon by the department of agriculture, it be only upon condition that the money so derived be expended for the direct benefit of the stock industry in the forests, in such was as exterminating wild animals, reduction of loco and other poisonous weeds, the development of water, the erection of drift fences, and in other ways deemed feasible."

THE DENVER MARKETS

The cattle market during the past two weeks has been very active and prices strong from day to day. All classes of cattle are selling here to good advantage and the market is de-

(Continued on Page 23)

Pratts

Positive Proof Offer~ $1.85 Value For 50¢

Not a "bargain sale," but the most remarkable offer ever made by any reliable manufacturer of Poultry and Stock Regulators and Remedies. We are making it now—at tremendous cost to ourselves—in order *to give you positive, practical proof of the real merit of our goods.*

We want *you* to give Pratts Preparations a rigid, working test, right on *your own farm* with *your own poultry and live stock.* Thus we can prove to you, finally and conclusively, that it will *pay* YOU to use them regularly. If we did not have *full confidence* in our preparations, did not *know* that they *would* give satisfactory results IN YOUR HANDS, we would not dare make this offer.

Run a comparative test if possible. Handle some fowls and stock the Pratt way—the rest in the same manner as before. Then note the difference in results. When you see that your fowls and live stock are healthier and more vigorous, do better work, are more productive, pay bigger profits when you use

Pratts Standard Preparations For Poultry and Live Stock

you will be convinced because you will have the evidence right before you. The results of the test will carry conviction better than all the arguments or promises we might present. If you really wish to know how to *increase your profits,* just try this plan now.

Take the signed coupon and 50c to any Pratt dealer—there is one near you—and he will give you your choice of either assortment of Pratts Preparations as stated in the coupon. **Each assortment has a retail value of $1.85, but now costs you but 50c.** We stand the greater part of the cost, since we credit the dealer with $1.35 for each coupon returned to us.

This Offer Good Only During February 1917

and each household is entitled to use but one coupon. Good only in the United States and Canada. The goods you will receive are *standard packages taken directly from the dealer's stock.*

We have been in business nearly fifty years and have never before made such an offer. It may never be made again. Your big opportunity is NOW! See your dealer at once.

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PRATT FOOD COMPANY, Philadelphia Chicago Los Angeles Toronto
America's Pioneer Manufacturers of Guaranteed Poultry and Stock Regulators and Remedies

THIS COUPON IS WORTH $1.35 TO YOU

Assortment No. 1		Assortment No. 2	
Poultry Regulator	50c	Animal Regulator	50c
Disinfectant	35c	Poultry Regulator	50c
Powdered Lice Killer	50c	Disinfectant	35c
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White Diarrhea Remedy	25c	Roup Remedy	25c
Total retail value	$1.85	Total retail value	$1.85

NOTE: Pratts Preparations are put up in packages of many different sizes. The larger are more economical. The "best buy" in Poultry and Animal Regulators is 25 lb. pails or 100 lb. bags.

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This is your authority to deliver to bearer, upon receipt of this coupon properly signed and 50c in cash, Pratts Preparations—either assortment No. 1 or No. 2 as listed herewith—to the value of $1.85. This offer is good only during February, 1917, and but one assortment is to be furnished each household. Forward the signed coupon to our Philadelphia office and we will credit you $1.35. Good only in the United States and Canada.

Assortment No._____ Goods received (date)_____

Buyer's Name_____

Address_____

Dealer's Name_____

Address_____

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Reasonable Rates offered farmers and stockmen without commissions

Washing Machines, $8.50 UP

Save money on washing machines, hand or power. Our gasoline engine power machine shown here is fully equipped with pulley, reversible wringer, etc. Tub sets on strong iron base, with space for extra tub. Price complete only $27.20. Get our new FREE 400-page Catalog and 48-page Grocery List. Address

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HOLSTEIN CONSIGNMENT SALE

at the

UNION STOCK YARDS SALE PAVILION

South Omaha, February 21, 1917, by the

Holstein Breeders' Consignment Sales Co.

(Incorporated under the laws of the State of Nebraska)

THIS IS A QUALITY SALE

80 head of pure-bred registered Holsteins from the breeders' own herds, chosen to please the purchaser who desires to buy good breeding and quality. Among them are:

COWS—37 cows and heifers bred to 30 to 35-pound bulls; 10 daughters of 30-pound sires; 20 cows with advanced registry official milk and butter records; 3 cows with yearly records of over 16,000 pounds milk; a 27-pound cow; a 26-pound cow; a 25-pound cow; a 24-pound cow, and a 23-pound 3-year-old.

BULLS—King Segis Lyons, one of the greatest proven sires in the west, and who will have over 30 A. R. O. daughters in 1917; a 5-months-old son of Rag Apple Korndyke Boon (a 35-pound bull), from a 31.33-pound dam; a son of that wonderful producing cow, Katy Gerben, consigned by the University of Nebraska.

Everything over 6 months old tuberoulin tested by reliable veterinarians

SALE BEGINS AT 10 A. M. SHARP

The consigners are. University of Nebraska, Lincoln; S. B. Davis, Supt. the Indian School, Genoa; D. E. C. Brown, Fullerton; LeRoy Ball, Albion; W. J. Jenkinson, Monroe; D. M. Hildebrand, Seward; J. F. Bunte, Cortland; B. B. Davis, Omaha; Nelson Bros., Stromsburg; W. M. Condon, Humphrey; Badger & Frost, Central City; Little & Little, Clarks; C. J. Furry, Franklin; Dwight Williams, Omaha; E. C. Swanson, Stromsburg.

If interested, write for Sale Catalog.

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"ROUGH ON RATS" ends RATS, MICE, Bugs, Vegetable Exterminator. Ends Prairie Dogs, Gophers, Ground Hogs, Chipmunks, Weasels, Squirrels, Crows, Hawks, etc. The Recognized Standard Exterminator at Drug & Country Stores. Economy Sizes 25c, 60c. Small 15c. Used the World Over. Used by U. S. Gov't. Rough on Rats Never Fails. *Refuse ALL Substitutes.*

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Profitable Farm Poultry

W. E. VAPLON

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries Poultry Department, Western Farm Life, Denver, Colorado.

Troubled With Worms

Will you please tell me what to do for my turkeys and chickens? In their droppings there are little white worms about one-fourth inch long. They are in perfect health otherwise but not laying. Can you please give me a remedy?—J. H., Midvale, Idaho.

Dr. B. F. Kaupp, of the West Virginia Experiment Station, was formerly connected with the Colorado Agricultural college. Of the small round worms which frequently invest poultry, he says: "Best results will probably be attained by giving areca nut or thymol. First, withhold food for 24 hours, then mix in a mash of ground grain two grains of areca nut for each bird, making the mixture about the consistency of batter. Pour the mixture in a trough so that all the birds can get to the feed at the same time and each bird obtains the same amount. A grain dose of thymol is also excellent treatment. This should be followed by a physic of salts or oil. These worms attach themselves to the intestines of the chicken and when found in large numbers sap the vitality of the fowl."

Turkeys Have the Roup

I have trouble with my turkeys. A disease something like a cold has bothered my flock the last two years. A year ago this fall a young tom took the disease, and I tried to cure it with different feeds but failed. Later my flock all got it and failed to get over it, so I killed and buried the most of them, in fact, all of them that were sick except two, one of which got well and is with the flock; the other is still sick and I have her locked to herself to see if I can cure or find a cure for her. They appear in good health, eat hearty and travel around O. K. but their nostrils swell behind until they cannot see to pick up their grain. What's the disease? It seems to be a cold, but chickens don't take it so it must be a turkey disease. The nostrils are filled with a stiff, clear liquid like the yolk of an egg. Squeeze the liquid out and within a few hours it fills again and appears worse.. If squeezed out very much it turns to canker. If you can enlighten me as to what it is and a sure cure for it I will be well pleased, and I know of another flock with the same trouble who would like to know what is wrong. Thanking you in advance, I remain, a well pleased subscriber of W. F. L.—W. R. P., Reed, Utah.

How the Farm Poultry Flock May Be Graded Up

(Continued From Page 4)

ities, if minor points, such as number of points to the comb, under color, etc., be forgotten.

In this day, with the best markets in the country at our doors, with enormous quantities of poultry products coming in from outside sources, much of it of very inferior grade, there is no reason why the producer of the Rocky mountain regions should longer keep a mongrel flock of fowls. Any flock, however inferior, can be brought up to a profitable, desirable standard in the course of two or three years of careful selection and breeding. When a change of males is made, the same qualities must be secured in the new, and the same breed be used continuously. Much of the breeding of poultry along productive lines is guess work, inasmuch as we have adopted no standard of measures to determine fecundity. Not only Potter of Illinois and Hogan of California, but an army of others are working along the lines of determining by the conformation of the hen, her capacity as a layer. When their findings are proven to the extent that they become biological facts, the egg farmer will come into his own. Until then the points which denote vigor and capacity will have to be used as guides by the average poultryman.

Factors Showing Fecundity

Following are a number of factors which are largely agreed upon as showing, to a large degree, fecundity: The well developed comb, full and red, denotes sexual development, health and vigor, abundant circulation of blood. The beak, short and stout as described in the Standard of Perfection, broad, deep head, also denote health and vigor, which qualities necessarily precede egg production. The familiar term "wedge shape," denotes capacity. Much stress is laid on this factor by the dairyman; also on the rounding spread of ribs making a large body, denoting large room or capacity. The cow is considered a machine, the feed the raw material; she must have large space for turning this raw material into milk, the finished product. The wedge shape in the hen, comparatively small, horizontally and vertically in front, relatively large in the rear, denotes large capacity, space for well developed active machinery, the ability to use much raw material for the manufacture of the finished product, eggs. The amount of space between the end of the breast bone and the pelvic bones, whether more or less, is supposed to show the egg-laying capacity of the hen. If the pelvic bones are thin and pliable, the hen is supposed to be a good layer, while thick, rigid pelvic bones denote the reverse. The pelvic bones are farther apart during the laying period and the space is wider in prolific layers than in moderate or poor layers. So much for the hen.

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John Wanamaker, the merchant prince, who owns and conducts the largest department store in the world, says:

"A great, grand work is being done by the business colleges. They deserve at the hands of all men strong encouragement for their patience, wisdom and practical work."

Mr. Wanamaker employs thousands of young people; he knows the importance of training.

There are unusual opportunities for young people in business at this time. Last year we received more than 1,600 calls for office workers and were unable to fill many excellent positions.

New pupils may enroll at any time. Write for catalog.

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and Planters Guide, now ready for distribution, describing BURTON'S QUALITY SEEDS, tested under Western conditions on our Farm and Trial Grounds. It is full of cultural directions, concise descriptions and valuable information, gained from actual experiences.

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THE BURTON SEED CO.
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WITH CHEAP INCUBATORS

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Poultry Book Latest and best yet; 144 pages, 215 beautiful pictures; hatching, rearing, feeding and disease information. Describes busy Poultry Farm handling 63 pure-bred varieties. Tells how to choose fowls, eggs, incubators, sprouters. This book worth dollars mailed for 10 cents. Berry's Poultry Farm, Box 66, Clarinda, Iowa

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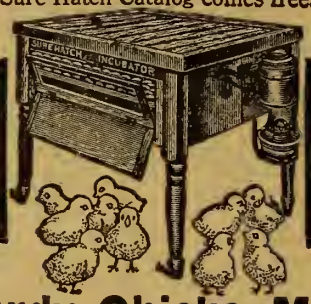

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TOM BARRON STOCK—282-EGG BLOOD

That is the dam's record of male in pen No. 1, imported from Barron's plant in December, 1915. Our strain of Leghorns lay and pay. They make money for us; they will for you.

DAY-OLD CHICKS——EGGS FOR HATCHING

From strong, healthy range-raised stock—sure winners at the egg basket. If you want eggs and profit get the bred-to-lay kind—tested 7 years. Our prices are very reasonable. FREE CATALOG. Send for your copy—do it now. Satisfied customers all over west.

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Single Comb White Leghorns

In Colorado. All eggs or chicks from our own matings on our own farm, hatched by experts. You take no chances; safe delivery guaranteed. Colorado climate poultry will give your flock a new lease on life that cannot be had in any other way. Send for catalog. It illustrates and describes all.

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ROYAL BLUE STRAIN RAUEN DUCKS, $1.75 each. Eggs in season. Jas. Cassell, Fremont, Neb.

WHITE WYANDOTTE EGGS FROM TRAPnested stock. Mary M. Wright, Route 2, Boulder, Colo.

WHITE WYANDOTTE COCKERELS, REASONable if taken soon. Mrs. Geo. Wheeler, Route A, Otis, Colo.

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WHITE ROCKS—PULLETS, ONE DOLLAR; hens and cockerels, one-fifty each. Lone Tree Ranch, Carr, Weld Co., Colo.

BARRED ROCKS, COCKS, HENS, COCKERELS, pullets. Highest quality, reasonable prices. Brevick, 1249 S. Logan, Denver.

EGGS, $1.50, $2.00, $2.50, $3.00—PRIZE WINning stock. Cockerels, $5.00. Mrs. D. S. Davis, 140 ackson St., Denver, Colo. J

BARRED PLYMOUTH ROCK COCKERELS FOR sale—From extra good laying strain; $2 to $3 each. Mrs. C. W. Douglass, Wray, Colo.

WINTER LAYERS—BARRED PLYMOUTH Rock eggs $1 for 15; $4 for 100. Mrs. Lon Edwards, 1105 Garfield Ave., Loveland, Colo.

MAMMOTH BRONZE GOBBLERS AND WHITE Wyandottes. Choice young stock for sale. Miss Anna Lansdown, Box 291, Fort Lupton, Colo.

LIGHT BRAHMAS—FROM PRIZE STOCK; greatest winter layers. Cockerels, pullets and hens for sale. E. Grosser, 2240 Perry St., Denver.

ROUGH ON LICE. NO POWDER, NO DUSTing. Gets lice in 24 hours or money back. Fifty cents postpaid. W. C. Loney, Greeley, Colo.

BOOK YOUR ORDERS NOW FOR BRONZE Turkey Eggs, 20c apiece. Pure bred, two-year-old stock. Mrs. C. J. Davidson, Fort Lupton, Colo.

S. C. W. LEGHORN COCKERELS—I HAVE 20 of them left that I will sell at $2.00 each. Order from this ad. Bellevue Poultry Farm, Scammon, Kan.

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RIVERSIDE POULTRY FARM S. C. WHITE Leghorns. Heavy winter layers. Range raised. 12 years in the business. Hatching eggs, baby chix for sale. H. D. Walker, La Junta, Colo.

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BARRED PLYMOUTH ROCK COCKERELS. Heavy egg-laying strain. Large boned, fine barred, yellow-legged. Price $1.50 to $2.00 each and up. Mrs. Raymond Voss, Hubbard, Neb.

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SILVER LACED WYANDOTTES, PRIZE WINners; vigorous farm raised birds. Choice cockerels $1.50 to $2. Well laced yearling hens, $1.50; pullets, $2. Minnie Patterson, St. Charles, Minn.

LONEY'S EGG STRAIN BARRED ROCKS.—Some choice cockerels left. On March 1st will sell 100 early pullets that have laid steadily since Oct. 1st. Get few good breeders and start right. W. C. Loney, Greeley, Colo.

EXHIBITION AND HEAVY LAYING TYPE Single Comb Reds. We are the oldest breeders of reliable Reds in the West. Eggs now ready for hatching, $6.00 per 100. Send for circular. Lower's Poultry Farm, Arvada, Colo.

FREE—HOW TO MATE AND BREED RHODE Island Reds. Just what you want to know but could not get correct information. Send stamp. Trapnested stock, both combs, big dark velvety red strain for sale. Ava Poultry Yards, Ava, Mo.

100 ROSE COMB RED COCKS AND COCKERels sired by roosters costing $15 to $35, $2, $3.50, $5, $7.50 each. A few higher. Order at once; they will go fast; 1917 pens best ever. Baby chicks. W. R. Huston, Red Specialist, Americus, Kan.

COCKERELS, $2. PULLETS, $1.50 EACH. Can make up some good pens at very reasonable prices. All the leading breeds. Now is the time to order eggs for early spring delivery, $1.50 per setting; $6.00 hundred. Booking orders now for baby chicks. J. L. Keating, Box 357, Kansas City, Mo.

S. C. W. LEGHORNS, HATCHING EGGS FERtility guaranteed; day old chix, born with a "hustle" in them. From trap nest recorded and Hoganized parents. Order now for March to July deliveries. Satisfaction guaranteed. Established 1908. Rosawill Poultry Farm, R. No. 4, Box 60, Denver, Colo.

IT'S GOOD BIG HATCHES YOU WANT THIS year. Denver Incubators are built and tested for this dry climate and positively do the work. Get our free catalog. Low prices, with freight prepaid. Coal heated colony brooders. Baby chicks and eggs for hatching from purebreds. Denver Incubator Co., 177 S. Broadway, Denver, Colo.

EGGS, EGGS—FROM THOROBRED TURKEYS, geese, 8 kinds of ducks, Pearl and White Guineas, Barred, White and Buff Rocks, Houdans, Rhode Island Reds, Hamburgs, Games, White and Silver Laced Wyandottes, Leghorns, Langshans, Light Brahmas, Minorcas, Cochins, Buff and White Orpingtons, Bantams, also Hares, Rabbits, Guinea Pigs and Fancy Pigeons. D. L. Bruen, Platte Center, Neb. Write wants.

PET STOCK

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PEDIGREED SCOTCH COLLIE PUPS FOR SALE —Males $15, females $10. J. J. Gavin, 4616 Alcott St., Denver, Colo.

YOU CAN MAKE A GOOD LIVING IN YOUR back yard raising Belgian hares. Particulars and price list of all breeds, 10 cents. Thorson's Rabbitry, Aurora, Colo.

LIVE STOCK

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CHELMSFORD JERSEY FARM CAN SEND YOU a bull ready for service, registered. R. F. D. 58, Littleton, Colo.

HIGH CLASS JERSEYS—COUNT MAJESTY AT head of herd. His dam, Mandana's Lady Imp., last year gave 14,014 lbs. milk, 784 lbs. 1 oz. butter. His calves are showing up fine. Have one December bull calf by him for sale. He is good. Could spare one or two cows. Also Duroc hogs at best breeding. A. M. McClenahan, Greeley, Colo.

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REGISTERED BIG TYPE DUROC JERSEY hogs for sale. Edgemoor Farm, Littleton. Colo. Caldwell Martin, Owner.

REGISTERED DUROC JERSEY BOARS AND gilts. Sell at $15 up, according to age and quality. Registered gilts bred to our boars at $30 up. Our hogs top the market every time in Denver, and we hold the record on that market at $11.10 for 6-months-old barrows averaging 206½ lbs. J. O. D. Ranch. Aroya, Colo.

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WANTED—TO HEAR FROM OWNER OF GOOD ranch for sale. State cash price and description. D. F. Bush, Minneapolis, Minn.

RANCH FOR SALE—140 A., GOOD IMPROVEments, 2 miles west of Gunnison on the Gunnison river. Fine dairy and fishing resort. Address Box 34, Gunnison, Colo.

FOR SALE—$2,000 BUYS A SMALL, OLD established, well paying dairy in coal mining town; will bear investigation. Address C. I., care of Western Farm Life.

FOR RENT—480 ACRES UNIRRIGATED, close to Denver, new improvements, crop share rent. Want man with family; must have plenty of horses and machinery; references required. Address C. P. L., care of Western Farm Life.

TO FARMERS—WHY PAY RENT? One-half of crop annually will pay for fine irrigated land close to our town. Those having necessary tools and horses to farm with, this is a fine opportunity to get a good farm. Write today. Merino State Bank. Merino. Colo.

LAND—I HAVE PLACED OVER 400 FAMILIES in Weld County, mostly on homesteads and relinquishments. I know nothing desirable left open to entry, but can still furnish partly improved relinquishments or deeded lands at very low price. Call for list. Every statement guaranteed. Land shown by auto from Denver. Mackley, 1643 Champa, Denver, Colo.

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YOUR CHANCE IS IN CANADA—RICH LANDS and business opportunities offer you independence; farm lands, $11 to $30 acre; irrigated lands, $35 to $50; twenty years to pay; $2,000 loan in improvements, or ready made farms. Loan of live stock; taxes average under 20 cents an acre; no taxes on improvements, personal property or live stock; good markets, churches, schools, roads, telephones; excellent climate—crops and live stock prove it. Special homeseekers' fare certificates. Write for free booklets. Allan Cameron, General Superintendent Land Branch, Canadian Pacific Ry., 19 Ninth ave., Calgary, Alberta.

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LUMBER CHEAP DIRECT TO YOU. PACIFIC Coast Sawmill Co., Portland, Ore.

LUMBER—POSTS AT LOWEST PRICES. GET our delivered prices. Send lumber list for estimate. Pay after unloading. Kirk Company, Tacoma, Wash.

LUMBER, MILLWORK, FENCE POSTS—DIrect from mill at wholesale prices. Write for big free winter buying offer and plan booklet. Keystone Lumber Co., Tacoma, Wash.

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WANTED—LIVE AGENTS AT ONCE. EXCELlent terms. Falls City Nursery, Falls City, Neb.

MAN TO WEAR FINE SUIT, ACT AS AGENT. Big pay, easy work. Banner Tailoring Co., Dept. 502, Chicago.

WE WANT A RELIABLE MAN OR WOMAN TO handle subscriptions in each community. Liberal terms. Write us today. Western Farm Life, Denver, Colo.

THOUSANDS GOVERNMENT JOBS OPEN TO men-women; $75.00 month. Steady work. Short hours. Common education sufficient. Write immediately for free list of positions now obtainable. Franklin Institute, Dept. W177, Rochester, N. Y.

SALESMEN WANTED TO CANVASS THE farming and threshing trade, soliciting orders for lubricating oils, greases and paints. Excellent opportunity for right party. Previous experience unnecessary. Address at once, The Victor Oil Company, Cleveland, Ohio.

SEEDS

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DAHLIAS, 185 NAMED KINDS; CANNAS, HARDY flowers, shrubs and fruit. Write for prices. James McMullen, Franklin Ave., Council Bluffs, Iowa.

FREE 1917 PLANTING GUIDE AND PURE Seed Book; 96 pages. Handsomely illustrated in many colors. Describes latest, best varieties vegetables, flowers, field crops, fruits, shrubbery, etc. A dictionary on gardening. Flower lover's delight. Field crop guide. An orchardist's manual. Berry-grower's book. A postal gets it. Don't buy seeds until you read it. Galloway Bros. & Co., Pure Seed Specialists, Waterloo, Iowa.

MISCELLANEOUS

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PLENTY OF MONEY TO LOAN ON CHOICE farms at 6 per cent. Paul B. Walker, Fort Morgan, Colo.

FOR SALE OR TRADE FOR LIVE STOCK—20 H. P. Reeves traction engine in good order, with plow and water tank if desired. J. W. Cummings, Glenwood Springs, Colo.

FARMERS AND STOCKMEN, IF TROUBLED with Loco Weed, you can kill it with our Loco Killer without chopping or digging. Also want men to handle territory. If interested, write Western Mfg. & Trading Co., Box 673, Denver, Colo., Successors to Weisenborn & Huek.

KODAKS, CAMERAS, PHOTO SUPPLIES—Ford's, the best kodak store, 1029 16th St., Opp. Old P. O., Denver, Colo., for Eastman Kodaks, all makes cameras, films, photo supplies; develop any size roll film, 10c; print pictures, 3c each and up; mail orders solicited; kodak and camera catalogs mailed free upon request. Mention this paper.

PATENT ATTORNEYS

IDEAS WANTED — MANUFACTURERS ARE writing for patents procured thru me. Three books, with list hundreds of inventions wanted, sent free. I help you market your invention. Advice free. R. B. Owen, 162 Owen Bldg., Washington, D. C.

BEE SUPPLIES AND HONEY

DELICIOUS ALFALFA HONEY FROM PRODucer. Two 60-lb. cans, $11.75. Satisfaction guaranteed. Wesley Foster, Boulder, Colo.

BEE SUPPLIES OF BEST QUALITY. SEND for 68-page illustrated catalog. We also sell comb and extracted honey. The Colorado Honey Producers' Association, Denver, Colo

FREE FOR SIX MONTHS—MY SPECIAL OFFER to introduce my magazine, "Investing for Profit." It is worth $10 a copy to anyone who has not acquired sufficient money to provide necessities and comforts for self and loved ones. It shows how to become richer quickly and honestly. Investing for Profit is the only progressive financial journal and has the largest circulation in America. It shows how $100 grows to $2,200; write now and I'll send it six months free. H. L. Barber, 449-20 Jackson Blvd., Chicago.

The Denver Markets

(Continued From Page 21)

cidedly satisfactory from the standpoint of the seller. New records are continually being made and shippers are showing a disposition to market their stock at Denver. Good fat steers are in strong demand and selling from $9 to $10.25, the latter being the highest price ever paid on this market for fat steers. Good cows are selling from $7 to $7.75 and fair cows from $6 to $7. Bulls are bringing $5.50 to $6.25 and veal calves are moving at $9 to $10.50. The feeder and stocker trade is decidedly active as far as it goes. Supply is comparatively light, but there is a strong inquiry for all the good steers offered and trade is brisk. Good to choice feeding steers are selling from $7.75 to $8.50 and fair to good grades are bringing $6.50 to $7.50.

The hog market is steadily advancing and prices are now around $11 for the best grades, which is very close to the record high price on the Denver market. Packers are taking everything that comes this way and could use more good quality, well-finished hogs. A good many half fat and inferior grade hogs are coming to market and there is a disposition among buyers to discriminate against these.

The sheep trade is active and supply quite liberal. A large number of northern Colorado feeders are now marketing their sheep and lambs at Denver and prices are the highest ever known on this or any other market. Good fat lambs are selling from $13 to $13.50 per hundredweight, good yearlings around $11.50 to $11.75 and good fat ewes are bringing $9 to $9.50. The demand is strong at these prices and packers are taking everything they can get. Indications point to a liberal run here during the next couple of months.

The horse market is rather quiet and little change in prices from two weeks ago. Good horses of all kinds are in very fair demand and the market is fairly active for this time of the year.

LIVESTOCK NOTES

The San Luis Valley H. O. G. Club will hold its annual hog roast in Monte Vista, Colo., Friday, February 9th. This association has made the great San Luis Valley cholera-free and has saved the farmers and stockmen hundreds of thousands of dollars. The hog roast this year will be bigger and more elaborate than ever before.

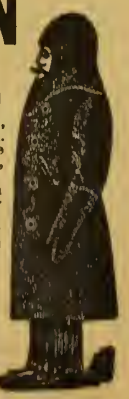
At the big public Hereford sale of O. E. Green, South Omaha, Neb., February 14th, Western breeders will have an opportunity to secure some choice individuals—the tops of the produce of his fine herd for 1915-16. Read his advertisement on another page. Write for catalog. Select individuals, bring them home and improve your herd.

The sheep of Wyoming contributed 30,000,000 pounds of wool to the prosperity of that commonwealth in 1916.

Western farmers and dairymen will have an exceptional opportunity to secure some of the best Holstein blood for their herds at the big Holstein-Freisian consignment sale at the South Omaha, Neb., stock yards February 21, 1917. This sale will be in charge of Dwight Williams. The advertisement of this big sale will be seen in another column of this issue.

All Holstein breeders are familiar with the fine herd bull, Juliana Grace de Kol, a sire of wonderful individuality and wonderful record breeding. This sire's dam, Queen Juliana Dirkje, was, until recently, the world's champion 3-year-old yearly butter cow. The dam, Grace of Portage De Kol, has a yearly record of 924 lbs. of butter which, at the price butter is selling, would mean an annual income of $369.60. This is the kind of blood that farmers and dairymen ought to introduce into their herds. Animals of this strain can be had at the Albechar Holstein Farm, Independence, Kan. This farm has a large herd of Holsteins, consisting of 160 head, and they can be had either singly or in carload lots.

LET US TAN YOUR HIDE.



Cattle or Horse hide, Calf, Dog, Deer, or any kind of skin with hair or fur on. We tan and finish them right; make them into coats (for men and women), robes, rugs or gloves when ordered.

Your fur goods will cost you less than to buy them, and be worth more. Our illustrated catalog gives a lot of information which every stock raiser should have, but we never send out this valuable book except upon request.

It tells how to take off and care for hides; how and when we pay the freight both ways; about our safe dyeing process which is a tremendous advantage to the customer, especially on horse hides and calf skins; about the fur goods and game trophies we sell, taxidermy, etc. If you want a copy send us your correct address.

The Crosby Frisian Fur Company, 571 Lyell Ave., Rochester, N. Y.

$7.50 Down *After* 30 Days Free Trial

Only $7.50 if satisfied after trial—then a few monthly payments

—and—

You Keep This Genuine Melotte

Write for catalog—it explains everything

Yes, sir, that is our offer on the world's greatest cream separator, the imported Belgian Melotte—the separator with the wonderful, self-balancing bowl. We are taking the lead. Let others follow if they will. Our catalogue explains. We say to you, "the world's greatest Melotte will give you *more cream*, bigger profits and greater satisfaction—*and*—it is up to us to prove it. You have a right to insist upon the proof when *anybody* makes claims for his separator." Read our offer.

Not a Cent in Advance

Just ask for a 30 day free trial. Then we ship the Melotte. No salesman, no agent calls; no one around to bother you or to influence you. You start using the machine according to every test you can think of. If you decide against it, all right—send it back *at our expense*. But—

If after thirty days you are convinced that the great Melotte is the cream separator for you, you can keep it on our rock bottom price offer—first payment is $7.50 after the thirty day trial, and thereafter just the same monthly payments. Send the coupon now for free catalog and full details of this offer.

Extra!

No Duty Now!

Save $15.25

The high tariff has been cut right —the great Melotte comes in absolutely free of duty. Good for the American farmer! He gets the great Melotte Cream Separator at an extra reduction of $15.25!

The high tariff and patent arrangements have kept the Melotte out of reach of the American farmer. Now this handicap is off. You can get the world's greatest separator now without this excessive duty charge—and on our rock-bottom, direct offer

Wonderful Record

The Melotte has won more than 264 international prizes at Brussels, Vienna, London, Paris, Amsterdam, Milan, St. Louis, etc.

One Melotte has been running at Remincourt, Belgium, the equivalent of 54 years of actual work without appreciable wear.

Here is *one* great reason for Melotte superiority: The bowl is *self-balancing*—it hangs down from a single bearing and spins like a top. Can't get out of balance. The Melotte turns so easily that the bowl spins for 30 minutes after you stop cranking unless you apply brake. No other separator requires a brake to stop the spinning. *The Melotte is guaranteed for 15 years.*

Repairs—

are hardly ever needed on the Melotte on account of its self-balancing bowl—no repairs compared with other separators.

BUT — We have on hand repair parts for ten years ahead. That is the first thing we attended to, a huge stock of repairs when we introduced the Melotte in this country, and it has been a gratifying surprise that we are using hardly any of that stock.

Rock-Bottom Price! Highest Grade Separator

WE offer you the Imported Belgian Melotte—the world's greatest cream separator—at the rock-bottom, before-the-war price: the same price charged in Belgium plus only $1.75 for water freight.

Seize this opportunity to get a highest grade separator on this astounding offer. You want a quality separator, one that you can be proud of all your life, one that will never bother you and that will always give you the maximum amount of cream without loss. So, we recommend to you the Imported Belgian Melotte—the separator with the wonderful self-balancing bowl that can not get out of balance and vibrate—especially now as we are making our rock-bottom offer. The Melotte is guaranteed for 15 years. Write at once, *while this offer lasts.*

Valuable Book FREE

"Profitable Dairying." Send the Coupon

The book is the work of B. H. Benkendorf, Wisconsin Dairy School-Agricultural College, Madison, Wis., and K. L. Hatch, Winnebago County Agricultural School, Winneconne, Wis. 88 pages. Contains no advertising whatever. A real, practical, commonsense treatise, telling everything about cows and dairying—how to feed and care for cattle—how to make more money out of your cows. Every farmer should have this book in his library. It is worth while getting now, even if you are not considering a cream separator at present.

We will send you this valuable book free upon receipt of the coupon. Also our new catalog describing fully the Melotte self-balancing bowl cream separator, and telling all about our rock bottom, 30 day free trial, easy payment offer. Send coupon while this offer lasts.

The Melotte Separator
H. B. Babson, U. S. Manager
19th St. and California Avenue
Dept. 4162
Chicago, Ill.

The Melotte Separator
H. B. BABSON
U. S. Manager
19th St. and California Ave.
Dept. 4162 Chicago, Ill., U.S.A.

Without any obligation on me send me free and prepaid your booklet, "Profitable Dairying," and your special free-tariff prices on the Imported Melotte Cream Separator Also full details of your free-trial, monthly-payment, no-money-down offer.

Name.....

Address.....

.....

Try Them All!

All the Makes on the Market

HERE'S a frank open suggestion:—Have *every* manufacturer that is willing to give you a free trial, ship his separator to you. If he is not willing to give you a 30 day free trial, ask him *why* he won't—get his *reason*.

Set them all up side by side, the Melotte and all the others, and then make the test. Keep a record of the results. See which skims the closest—which gives you the most cream. Figure out, on this basis, which will bring you the most profit. Notice which machine is easiest to operate—which is the least tiring. Then notice the construction Which will stand the most wear? Which is most substantial?

We leave all this to your judgment. Look them all over. Analyze the results you get. Decide. Then keep the one which has proved best.

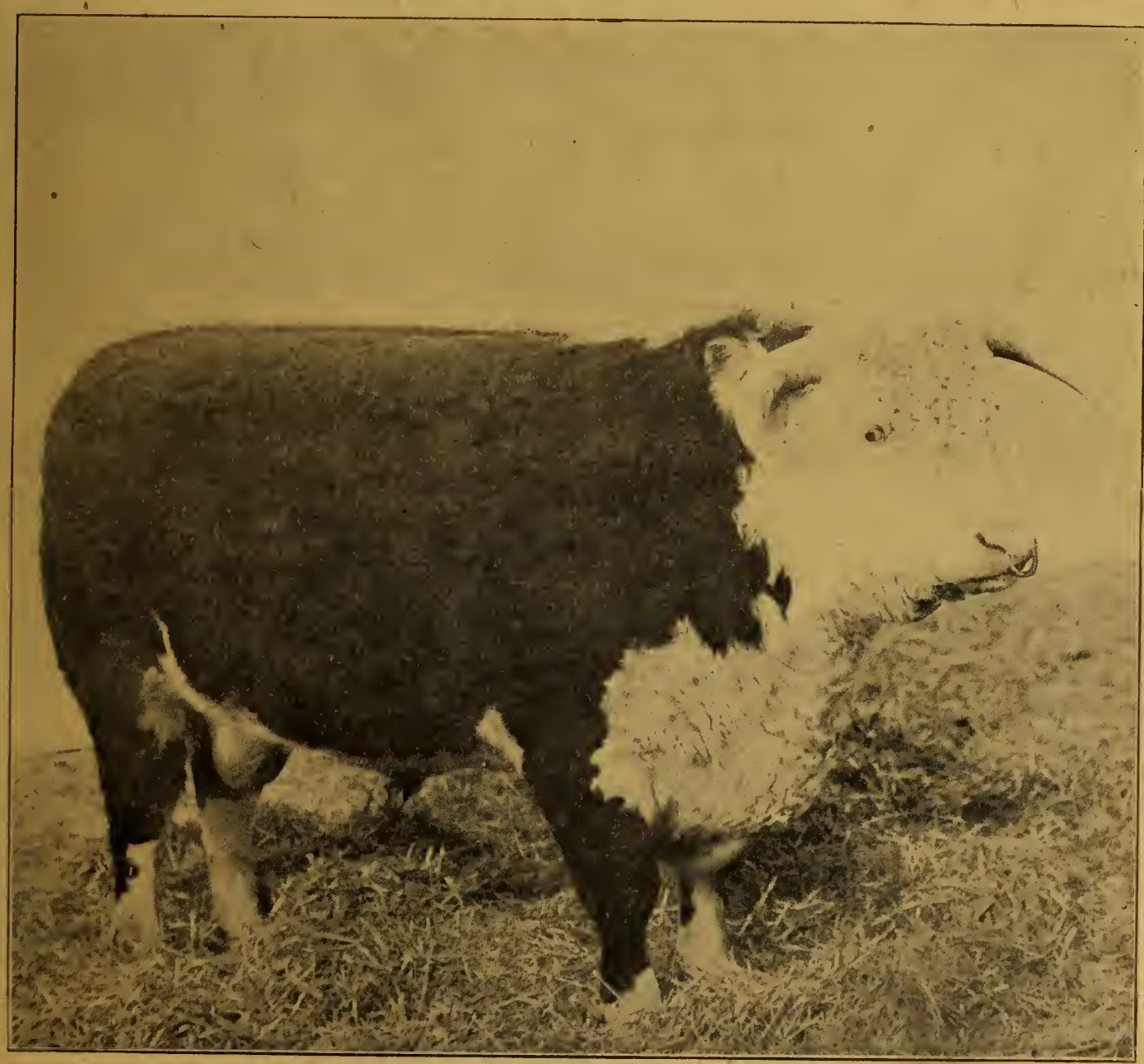
We're only *too glad* to have such a test of all machines together; then when you've bought the Melotte you'll be all the more a "booster" for us.

We are willing to abide by your judgment without a word. Remember the terms of our offer—if you want to return the Melotte, you may do so at our expense.

Don't buy any separator until after you have tried it 30 Days Free on your own farm.

Send the coupon at once for our Melotte catalog and the valuable book on dairying—no obligation.

WESTERN Farm Life



THE $5,000 GRAND CHAMPION HEREFORD BULL

This Is Panama, Grand Champion Hereford Bull of the National Western Stock Show, Who Brought $5,100 in the Auction Ring, the Highest Price Ever Paid for Any Animal in the West. He Comes From the A. B. Cook Herd, Townsend, Mont., and Is a Fair Sample of What the Rocky Mountain Country Can Produce in the Way of White Faces. The Purchaser Was Thomas Mortimer of Madison, Neb., Who Judged the Herefords and Knew What He Was Buying.

Denver, Colorado
Feb. 15, 1917

Save Your Worn Tires

GET 5,000 MILES MORE

service by "half-soling" them with Steel Studded Treads the same as European Motorists have been doing for over 3 years. 30,000 American Motorists have done this in the last 8 months and are saving $50.00 to $200 a year in tire expense.

5,000 Miles Without Puncture is the signed guarantee you get with every Durable Steel Studded Tread.

We Deliver Free without a cent deposit, pre pay the express and allow you to be the judge

Special Discount offered to motorists in new territory on first shipment direct from the factory.

Stop throwing away your worn tires-- mail the coupon below for details-- be sure and put in your tire sizes.

Get 5000 More Miles

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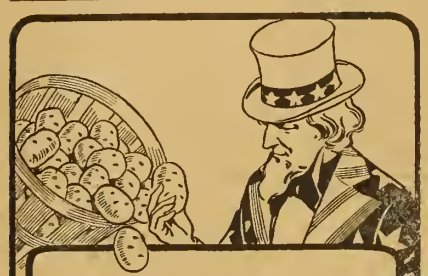
B-78 Transportation Bldg., Chicago, Ill.
720-782 Woolworth Bldg., New York City

Without obligation send me free catalog, copy of guarantee, sample and booklet "10,000 Miles on One Set of Tires."

Name _____
Address _____
_____
My Tire Sizes are _____



Smooth, Clean Potatoes

First rid your seed potatoes of scab and black-leg diseases before planting and you can be assured of a 30% to 40% increase yield.

FORMALDEHYDE
The Farmer's Friend

is *the* official standard seed cleanser. Potato scab and black-leg once in the ground may persist for many years. The U.S. Dept. of Agriculture recommends cleansing seeds with Formaldehyde solution to prevent spread of potato diseases. It destroys smuts of grain and fungus growths. One pint 35 cents at your dealer treats 40 bushels of seed. New and illustrated book sent *free*.

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Clear your stump land cheaply—no digging, no expense for teams and powder One man with a K can rip out any stump that can be pulled with the best inch steel cable. Works by leverage—same principle as a jack. 100 pounds pull on the lever gives a 48-ton pull on the stump. Made of Krupp steel—guaranteed against breakage. Endorsed by U. S. Government experts.

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Hayes Hand & Power SPRAYERS

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50 Styles HAYES PUMP & PLANTER CO., Dept. N, Galva, Ill.

Advertising Helps to Keep Prices Down

Two prominent business men were talking things over not long ago. One of them asked the other, "What is the most common delusion in the business world today?" Instantly came the reply, "The idea that advertising adds to the price of goods."

Every now and then some manufacturer has the hardihood to say that he can sell his goods cheaper because he doesn't advertise. Every one who knows the A B C of business knows that this claim is impossible on its face. Yet it sounds plausible and such talk deceives millions of people.

Forget all these sophistries and listen now to the plain commonsense of the matter.

In the production and marketing of goods there are two inevitable costs. One is the manufacturing cost; the other is the selling cost. And no way has ever yet been found by which either of these costs can be eliminated. Mark that.

Whether you buy farm products at a grocery store, or mill products at a dry goods store, or laboratory products at a drug store—whatever you buy at any store, be sure of one thing: the price includes the selling cost. It must, else the manufacturer, the wholesaler, the retailer and the salesman could not live.

And just as surely as there are always two items of cost, the manufacturing and the selling, just so surely are there only two ways in which the price of goods can ever be reduced.

One is by economies in manufacturing cost. The other is by economies in selling cost.

Of course, it isn't easy to cut manufacturing cost without cutting the quality.

But in modern times a way has been found to cut selling cost—and its name is Advertising.

Advertising is like a straight line; the shortest distance between two points—the producer and the consumer. It cuts out the grades, curves and the angles. It makes a drop of ink do the work of a salesman. Bear in mind that goods can never be sold unless there is a demand, and advertising creates this demand in the simplest, most direct and least expensive way. No other sales method can equal it in magnitude of return for a minimum of cost.

And the big returns from advertising also cut down the manufacturing cost—that's another saving. Increased volume of production always means a decrease in the unit cost of production through better and more efficient manufacturing methods.

The Association of National Advertisers has recently been gathering some remarkable facts and figures on this subject. They show how one after another of the big advertisers of the country have been able to reduce the price of their product or else to improve the quality at no increase in price. It is a significant fact that nationally advertised goods are the only product which, as a class, have not tended to rise in price during the past few years.

Countless causes are working today to force prices up. We all know this by sad experience. Against all these forces one force only is working to keep prices down—and its name is Advertising.

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Listening to the Auctioneer

When you stand in the cold wet mud of the spring thaws, you can appreciate real comfort in rubber footwear.

Take care of your feet. It is very important that you should. Let your rubber and woolen footwear be

"BALL (Red) BAND"

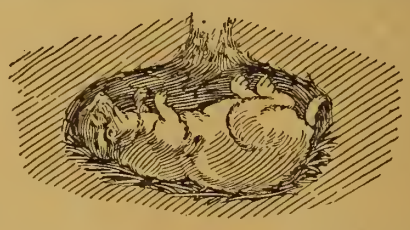
Why do nine million people wear "Ball-Band"? Because those who buy it never regret their purchase. They get more days wear at the lowest cost per days wear.

Ask your dealer for a pair of "Ball-Band" Light Weight Rubbers. They are of the highest quality and come in sizes for men, women and children.

If your dealer doesn't sell "Ball-Band," let us know.

Our free booklet, "More Days Wear," will be sent you on request. It shows the right kind of rubber footwear for different kinds of work, also for hunting and fishing.

Mishawaka Woolen Manufacturing Company, 336 Water Street, Mishawaka, Indiana
"The House That Pays Millions for Quality"



Save Your Crops
Use
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Sure Death to These Pests
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Recommended by the State Agricultural College
Spray Your Chicken Houses and Farm Buildings with Crown Brand Creosote Oil. Kills Lice, Mites and Germs.
The Dependable Disinfectant

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Team Harness - - - - $35.50 up.

We have bought and sold harness for 35 years. This experience is now concentrated in our this year's harness values. You can't equal them. Best quality. Best styles. Best prices. Full line. Write us. Get big 400-page Free Book and Special Grocery Book They are full of bargains

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We manufacture all sizes and styles. It will pay you to investigate. Write for catalog and price list.

CURRIE WIND MILL CO.,
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Entered at the Denver Postoffice as Second Class Matter

WESTERN FARM LIFE

A Western Magazine for Western Farmers and Stockmen

Comprising Ranch and Range, Farmers Life and Fruit Journal, Trans-Mo. Farmer and Ranchman

Largest Circulation of Any Farm Magazine in the West

Volume XIX DENVER, COLORADO, FEBRUARY 15, 1917 Number 4

Profitable Marketing of Eggs Depends on Farmer

W. E. VAPLON

Lamp and Box for Candling Eggs. (Extension Bulletin Oregon Agricultual College.)

MORE than four years ago, Mr. J. J. Ferguson, of the Swift Packing Company, said: "During the last ten years the population of this country increased practically twenty per cent, whereas the supply of meat producing animals showed practically no increase. The ranches and ranges of the great West have been broken up to meet the encroachment of the homesteader and small farmer, consequently, the plains country will not furnish any considerable portion of our meat food supply until the primary stage of grain growing has been passed and the farmers of the West engage in livestock production. There is, therefore, no reasonable possibility that for years to come the production of meat foods may overtake the demand.

"The poultry business offers an immediate, profitable source of supply, as poultry can be raised almost anywhere in the United States. The original investment is small, returns come quickly, and with proper care and feeding returns are larger in proportion to the capital invested than in any other line of livestock operation.

"There is no danger of the poultry business being overdone. In 1911 production of the American hen was valued at over $620,000,000. This enormous production was readily absorbed; in fact, was not equal to the demand, as shown by the steady advance in prices for poultry and eggs during the season of heavy consumption."

The past ten years has seen the production of eggs and poultry, especially in Colorado, increase with leaps and bounds, still Colorado is importing almost 50 per cent of the poultry products consumed by her population, and prices were never so high.

During the past ten years, beef cattle and sheep have decreased in numbers about sixteen per cent, with a steady increase in population. Hogs have increased in numbers from about forty-seven million in 1900 to sixty-eight million in 1916, while the increase of dairy cattle during the past ten years has been small.

Reliable figures on the poultry population are not so easily obtained, but on the whole the increase of production has been more substantial than has been the case with dairy and meat products.

Going Behind Each Year

If, as we are so often told, supply regulates the price, we are certainly going behind each year in supplying these products in sufficient quantities, and if the producer is not getting his proportionate share of the increase in prices, whose fault is it? We are not ready to discuss or cuss the middleman, but refer the reader to the following words by Secretary of Agriculture, Mr. Houston: "The farmers must be induced in particular communities to develop staple products, to standardize them, to prepare them properly for market, to study what market to reach at a given time, and the best and most economical method of shipping the product. Nothing less than concerted action will suffice. The individual farmer cannot solve the problem. He cannot sufficiently control the problem of production or of machinery for marketing or the transportation facilities.

"Of course, I am not speaking of concerted action which shall have for its object the establishment of a closed market or the fixing of prices. I imagine we shall not accept such a principle in agriculture any more than we would in manufacturing. It is as unnecessary as it would be undesirable. I am simply suggesting the introduction of business principles into farming for pure economic efficiency. The results of this will be beneficial to the producer as well as to the consumer."

The creameries and cream stations are helping to solve the butterfat problem, so that now less butter is being made on the farm, consequently there is less loss to the farmer, because of putting poor butter on the market. The egg problem, elsewhere as in the mountain states, is still with us, and as big as ever. We are still bringing in the eggs, little and big, clean and dirty, brown and white, whole and broken, any old time, and then wondering why the consumer in the city pays twenty-five cents for that for which we received only fifteen cents. Just because Colorado is short of eggs is no reason for dumping poor stuff on the market, and until some attention is paid by our producers to standardizing, to preparing properly for market, to learning our markets so as to furnish what and when the market requires, we must expect to get the worse of the deal in attempting to compete with producers of nearby states.

With comparatively cheap land, almost ideal climatic conditions and the best market in the world, there is no reason why poultry raising on our farms should not be more than a sideline and eggs become a real money maker instead of a by-product. But the next move for better prices must be made by the farmer.

Producing Eggs for Market

No community has ever become famous for its products until after systematic organization those products were standardized, graded and put on the market when and how the market demanded; more, the product must be furnished in sufficient quantity to make it worth while for the market to bid for it. It is only good business to know for what the market will pay the highest price, and then furnish that article, whether it be a white or a brown egg, a large or small, white skinned or yellow skinned fowl; also to know how the consumer wants this egg or fowl, in cartons or loose, alive or dressed. If, as is the case, prices are high or low, or higher at one time than another, much may be done by the business farmer to furnish the product when the price is best. If the packer can afford to finish the poultry raised by the farmer before passing it on to the consumer, it may, in some cases at least, be profitable for the farmer to do a little of this himself. Surely there is no excuse for sending eggs we know or suspect are bad to the market when the loss is all charged to us and we have to pay for the grading and candling anyhow. In producing and handling eggs for market,

(1) Furnish plenty of clean nests.

(2) Gather eggs at least once a day; during hot weather twice daily is better.

(3) Have the poultry house floor and the surroundings clean.

(4) Keep the eggs in a clean, cool place.

(5) After the hatching season, dispose of all males or separate them from the flock.

(6) Market often, at least twice a week in summer.

(7) Never send eggs found in "stolen nests" to market without candling. In fact, all eggs should be candled if retail trade is being supplied.

Hints for Egg Producers

(1) Open nests, especially where the roosting space is limited, are often used as roosts. This evil can be remedied by making a slanting cover over the nests, or where house room is limited the nests can be arranged against the building on the outside, with an opening through the wall from the inside; this permits of gathering the eggs without going into the building.

(2) Eggs should never be allowed to remain in the nests over night; in winter because of freezing, and in summer because of setting hens. It is better to gather them at least twice during the day in summer if many hens use the same nests, as development of the germ spot is taking place while the egg is yet in the hen's body, and as long after the egg is laid as it is kept at a temperature of 68 degrees or higher.

(3) The egg shell is very porous and for this reason alone bad odors should be prevented about buildings and nests. Unless the floors and yards are kept clean, filth from the feet of the hens will be brought to the eggs. Dirty eggs is one cause of loss and low prices to the producer.

(4) To prevent growth of the germ the egg should be kept below 68 degrees fahrenheit. A kitchen or pantry is not usually a good place in summer for keeping eggs, either for market or hatching. A cellar is the best place, but bad odors in a cellar are no better for an egg than bad odors in a hen house.

(5) The fertile egg, because of the chick germ in it, deteriorates rapidly if exposed to heat, therefore infertile eggs are much more satisfactory for shipment in summer. Deterioration appears as a bloody streak on the yolk and can be readily detected under the candler. Another argument in favor of disposing of all roosters after the hatching season is that the price on the market for market poultry is much better during early summer than later when plenty of young fowls and hens are available.

(6) A fresh egg under the candle shows almost no air space. Under the very best of conditions and care some evaporation takes place and as the air space in the egg grows larger, the egg suffers in value, as all eggs in the city markets handled by the egg dealers are candled. Market often and regularly.

(7) Eggs in the stolen nest are often laid by the same hen, and are therefore more or less "aged." The producer is the ultimate loser and never "puts one over" on the dealer by sending such eggs to market; use such eggs on the home table or use them as fertilizer.

Five Laying Contests

Some of the results obtained during five years by the Missouri Experiment Station will undoubtedly be of interest to readers of Western Farm Life. Four hundred and one pens, composed of 2,600 hens of forty-seven varieties, from thirty-seven states and eight foreign countries, were entered.

Each hen ate (averaged) 75 lbs. of feed.

Each hen laid (averaged) 150 eggs.

One hen in twelve did not pay for her feed.

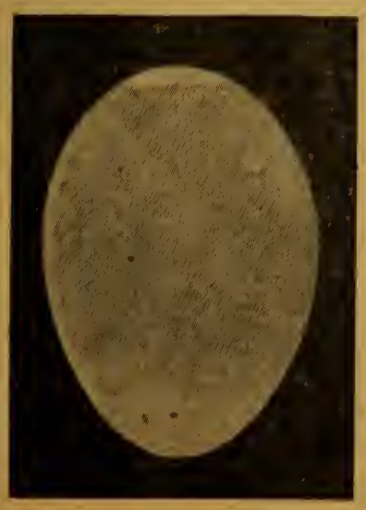
One hen in 8.5 laid over 200 eggs.

One hen in ten died.

One hen in 2.5 (averaged) went broody each year.

The varieties where hens were inclined to excessive broodiness (aver-

Continued on Page 19.



Fresh Egg. Note the Small Air Space at Top.

Stale Egg. A Large Air Space. The Yolk Has Also Settled to One Side of the Egg.

National Western Among World's Greatest Shows

ALVIN T. STEINEL

ONE who followed closely the progress of the 1917 National Western Stock Show is impressed with two or three outstanding facts that gave this exposition character and uniqueness distinguishing it from any similar event and distinctly marking its greatness among the world's livestock shows.

First in the order of significance was the active public interest in the judging of stock. While the city man saw little outside of the glamour and glitter of the evening horse shows, the farmer, whose interest and support of the exhibition is absolutely necessary to its success, was liberal in patronage and eager to follow the progress of events in the arena. He got right down to the elbows of the judges to find out the how and why of the placing of the animals.

The stock show management has, for years, emphasized the educational features of the exhibition, but it has taken a long time to realize to the fullest the advantage given the farmer in this respect. There can be no complaint on this score in future, for the crowding in the arena was at times inconvenient. The instructions to the officers were: "Let the farmers see what is going on," and the rule was followed to the letter. No one who had a professional interest in any class of stock being judged was prevented from closely following the judges. The result was that the center of the arena held hundreds where in the past there were only a handful close enough to get accurate knowledge of the proceedings.

Exhibitors were impressed by this same tendency, this thirst for information shown in the crowds that passed through the cattle barns. Thousands stopped to chat with the caretakers, to ask questions and get a close view of the stock.

College Men Were There

Another angle to the educational supremacy of the show was the presence of so many representatives of agricultural colleges from states where the pure bred stock industry is much older, notably Kansas, Nebraska, Missouri and Oklahoma. The experts were here to examine the exhibits with critical eye, and several of the colleges had their herds in the competition.

In accounting for this intense interest there are two things to consider, the first being the wide diffusion of good blood in the Rocky mountain states, largely through the educational work done by the annual exhibition, and, secondly, the fact that impresses everyone having some general knowledge of the livestock industry of the country at large, namely that there is something in animals bred in the mountain states that results from environment and not blood lines. This difference is not due to climate alone, but as well to methods of handling and feeding. There is in this atmosphere and sunshine of the high plains and the higher mountain valleys a potency that breeds vitality in the animal as well as in the plants which give it nourishment. Our breeders take full advantage of these natural conditions and their stock runs on the range, with the result that stallfed cattle from the eastern states are clearly outclassed on points pertaining to disease resistance and vitality.

Eastern Breeders Buy Here

Of late this fact is being realized by eastern breeders and they are backing their judgment with their money and buying western bred cattle to improve their own herds. This is the greatest compliment that could be paid our breeders, or the stock show management, and it marks the second of the signficant facts before mentioned.

States like Iowa and Kentucky are taking back some of our good sires this year because they show, to the eye of the veteran breeder, the type and hardiness that has been fixed as the ideal for the mountain states. One notable instance was the purchase of Standard 11th from the A. B. Cook herd of Montana by Col. E. H. Taylor of Frankfort, Ky., for $4,250. Col. Taylor sold to a man in his own state at the International in December, the record price Hereford sire for $15,100.

When eastern breeders from the blue grass country come to the National Western and pick up choice sires it means that the show has achieved something that its founders did not dream of when they called together the first exhibition of western range cattle, about twelve years ago. In those days the stockmen thought of the show mostly as a means of creating interest in pure bred cattle and for the development of the Denver market for range cattle. These objects were accomplished, but the results have been greater than anyone had reason to anticipate, for the eastern breeders now recognize the National Western show as a source of pure bred cattle for their own herds.

Development Just Begun

Credit for this is not due alone to the western breeders, but in equal measure to the far sighted men from the eastern states who have regularly shown here. They need not feel that our breeders are now sufficient unto themselves, or that the buying of eastern pure breds is soon to cease. We have not yet reached that point in our progress. The incidents that show this trend are the exception and not the rule. We still have much to learn and much to buy from the older breeders, because our development has just begun.

The third impressive fact is the buying of pure bred sires by the mountain states farmers in greater number than ever. This is the healthiest sign of progress of the industry —the backbone of the show. Hundreds of sires were sold during the week for distribution over a wide range of territory. Some farmers availed themselves of the expert aid of their county agriculturists in selecting desirable animals to head small herds. Thus the show is bearing fruit of the kind that indicates growth in the right direction, namely the stocking of every mountain states farm with cattle of good blood.

The Dairy Division

While beef as usual overshadowed everything else, the dairymen are up and coming. The industry is growing by leaps and bounds. Colorado has doubled its output of dairy products in the last six years, and neighboring states are making similar progress. One instance that developed during show week is that of the Lamar, Colo., district, unknown as a dairying center three or four years ago, and now having nearly 5,000 high grade or pure bred cows.

There should be a much more representative dairy exhibition. This is impressed when one considers the need for better cows in the dry farming districts of Colorado and New Mexico, where nearly every station now ships cream, but cows of distinctly dairy breeds are scarce. The common range cow has demonstrated her usefulness, but the profits are so meager that the farmer is milking with the intention of going into beef as soon as he gets "a little ahead." Just now is the time to get to these people with an active effort to improve the class of cows and put dairy farming on the plains on a substantial footing. The proper forage crops are grown and all that is needed is more silos and better cows. In the mountain valleys, where conditions are comparable to Switzerland, one of the world's most highly developed dairy countries, hardly a start has been made. There is a market in the mountain states for thousands of dairy animals, and this demand will be supplied in the next five to eight years from some source. The great growth of the beef breeding industry in a comparatively few years of educational processes, started by successive exhibitions in Denver, will be eclipsed by dairy development if the tide is taken at its flood, and that means right now.

Talk of a Separate Show

There is talk of a separate show at a season perhaps more convenient for the exhibitors, and while this enterprise may be too large to tackle at the present time, it is well to keep in mind the fact that the exhibition at present is not commensurate with the importance of this branch of farming and the assured growth of the industry in the next few years.

The National Dairy show in 1916 held its exhibition at Springfield, Mass., but even if it comes back to Chicago, that is too far east to be of any value to the mountain states. Denver is the place for a real Western dairy show, and to make it a success, state lines must be wiped out and the dairy breeders must follow the lead of the beef men and do things on a bigger scale. So far we have had only a local show, and while progress has been encouraging in the short period of three shows, it is only a bare beginning.

If the dairy division can reach its proper size and importance under the wing of the National Western, all well and good, but if it takes a separate show, let the breeders get behind that movement and put it through. This region will be the principal butter and cheese supply district of America in not many years if the proper stimulus is forthcoming right now that will focus the interest exhibited by dry land farmers on the plains and in the mountains in commercial dairying.

Champion Carlot of Fat Cattle, Fed and Shown by Clayton & Murnan, and Finished in Their Feed Lots at Eaton, Colo.

The Western Stock Show Association, which is a non-profit corporation organized under the laws of Colorado, is officered and managed by the following named: Hon. E. M. Ammons, president; Henry Gebhard, vice president; J. A. Shoemaker, treasurer; Fred P. Johnson, secretary and manager; Robert R. Boyce, assistant secretary; J. R. Mahon, superintendent; R. R. Dittman, superintendent of admissions; W. C. Baker, superintendent of concessions; H. H. Simpson, manager students' judging contest.

The directors up to the close of the 1917 show were: A. J. Campion, John F. Vallery, J. A. Shoemaker, Charles McA. Willcox, Charles G. Smith, H. W. Moore, E. M. Ammons, J. M. Kuykendall, Henry Gebhard, John E. Painter, George T. Wells, Carl W. Henry, Fred P. Johnson, George E. Morton, T. F. DeWitt, George W. Ballantine, R. A. Chace, Benjamin C. Allen, A. E. de Ricqles, M. H. Mark and James Brennan.

These are the men behind the big show. They deserve public recognition of their service to agriculture which has been of immeasurable benefit.

The Hereford Auction

Forty-eight head of Herefords, mostly bulls, went through the auction ring the morning of January 25th at an average price of $1,013. The top figure was $5,100 for Panama, from the A. P. Cook herd of Townsend, Montana, to Tom Mortimer of Madison, Nebraska. This price beat the record of the previous year by $100. Next in line was Standard 11th from the same herd, sold to Col. E. H. Taylor of Frankfort, Ky., for $4,250. Other animals that brought $1,000 or over were sold as follows:

Bull Tippecanoe Promise, C. A. Tow, Norway, Ia.. to the Hereford Corporation of Wyoming, $3,000.

Bull, Gold Dust, T. F. DeWitt, Parshall, Colo., to the Hereford Corporation of Wyoming, $2,600.

Heifer, Pet Perfection (first prize winner), John E. Painter, Roggen, Roggen, Colo., to Canary, Weston & Canary, Littleton, Colo., $2,250.

Bull, New Era, George Chandler, Baker, Ore., to the Hereford Corporation of Wyoming, $1,650.

Bull, Beau Sewell, Otto Fulscher, Holyoke, Colo., to David Firm & Sons, La Veta, Colo., $1,600.

Bull, Sir Beau Donald, A. B. Cook, to Charles Rule, Jenner, Colo., $1,625.

Bull, Wilton Mischief, Glendale Stock Farm, Aspen, Colo., to S. L. W. Ranch Co., Greeley, Colo., $1,250.

Bull, Beau Perfection 2d, John E. Painter, Roggen, Colo., to the Hereford Corporation of Wyoming, $1,100.

Bull, Beau Perfection 7th, John E. Painter, Roggen, Colo., to Canary, Weston & Canary, Littleton, Colo., $1,250.

Heifer, Miss Mansell 8th, John E. Painter to C. Blaine Scott, Idalia, Colo., $1,150.

Bull, Tommy Aster, Otto Fulscher, Holyoke, Colo., to W. E. Sears, Saratoga, Wyo., $1,025.

Bull, Heir Jr., T. F. DeWitt, Parshall, Colo., to A. A. Hunter, Walden, Colo., $1,000.

Bull, Carlos 101st, L. G. Davis to the Palmer Land Co., Monte Vista, Colo., $1,025.

Bull, Beau Carlos 19th, A. B. Cook to A. H. Barnum, Moro, Ore., for $1,100.

Cow, Dancing Girl, A. B. Cook to W. B. Mitchell, Marfa, Tex., $1,000.

The Shorthorn Sale

Sixty Shorthorn bulls were put through the auction ring on the morning of the 26th, the average sales price being $380, with a top of $1,200 paid by J. R. Carpenter of Cheyenne, Wyo., for College King, bred and owned by the Allen Cattle Co. of Colorado Springs. Others in the big money were bought by Samuel Ball of Wray, Colo., who paid $1,000 for Sandy 387323, a three year old bull bred by Carpenter & Ross of Mansfield, O., and consigned by H. Smith of Bozeman, Mont.

C. A. Hauf of Glendo, Wyo., paid

$1,150 for Supreme Monarch, a Purdy Bros. bull.

The sale ring was packed with a thousand interested stockmen, and the young bulls offered were sold over a wide area of territory, extending from Iowa to Washington and as far south as Arkansas.

Col. Fred Reppert, the auctioneer, gave the Shorthorn breeders a rousing good talk on the necessity for developing the market, stating that the cotton states and the Pacific coast states were buying Shorthorns and that the Rocky Mountain country should become supreme as a breeding ground for animals of that breed. He said there was no reason why the coast buyers should go right through Denver and on to Ohio to buy bulls when there were such exceptional offerings as those in the sales ring before him. That the far western and the southern buyers are coming here for choice sires was later evidenced when some of the offerings went to Idaho and Washington, while at least one animal went to the cotton country.

Feeder Carload Sale

Two hundred and twelve carlots of feeder cattle put through the auction ring in one day is the record for the National Western Stock Show of 1917. Because of high prices of feed it was somewhat problematical how the feeder buyers would tackle the proposition this year, but they were there with the money and the lots were cleaned up as fast as offered, and at figures that looked mighty good to the shippers. The day's record for sales was the highest ever established at any feeder cattle sale.

The grand champion carload of feeders, Angus calves exhibited by N. L. Harrison, Jr., of Roggen, Colo., brought $14.50 per cwt., and went to Heber Hord of Central City, Neb. The reserve champions, Shorthorn yearlings, exhibited by J. E. Bralden, La Jara, Colo., went to Bolick Bros. of Danville, Ia. The average on the 192 loads that sold by the hundredweight was $8.99. Most of the lots went to Iowa, Illinois, Indiana, Missouri, Kansas and Nebraska feeders.

$500 For a Steer

Five hundred dollars was the price paid for the champion purebred Hereford steer of the show, Heir-at-Law, shown by Dr. T. F. DeWitt of Parshall, Colo., and bought by M. Bartlett of Greencastle, Mo., who expects to fit the animal for the 1917 International. His weight was 1,150 pounds, the per pound price being 43 cents, which establishes a record for this show.

Hereford Awards

Senior champion bull: A. B. Cook, Townsend, Mont.

Junior champion bull: W. L. Yost, Kansas City, Mo.

Grand champion bull: A. B. Cook.

Reserve to grand champion bull: W. L. Yost.

Senior champion cow: A. B. Cook.

Junior champion heifer: J. E. Painter & Sons, Roggen, Colo.

Grand champion cow: A. B. Cook.

Champion pure-bred Hereford steer, Dr. T. F. DeWitt, Parshall, Colo.

Class 55—Senior heifer calf: First, John E. Painter & sons, Roggen, Colo.; second, Cyrus A. Tow, Norway, Iowa; third, W. L. Yost, Kansas City, Mo.; fourth, A. B. Cook, Townsend, Mont.

Class 56—Junior Heifer Calf: First, Canary, Weston & Canary, Littleton, Colo.; second, A. B. Cook; third, J. D. Canary, Saratoga, Wyo.; fourth, Canary, Weston & Canary.

Class 57—Aged Herd: First, A. B. Cook; second, W. L. Yost; third, T. F. WeWitt.

Class 45—Aged Bull: First A. B. Cook, Townsend, Mont.; second, C. F. Behrent, Oronoque, Kan.; third, George Chandler, Baker, Ore.; fourth, George Chandler, Baker, Ore.

Class 46—Two-Year-Old Bull: First, A. B. Cook, Townsend, Mont.; second, W. L. Yost, Kansas City, Mo.; third, T. F. DeWitt, Parshall, Colo.; fourth, T. F. Dolan & Sons, Denver, Colo.

Class 47—Senior Yearling Bull: First A. B. Cook, Townsend, Mont.; second, W. L. Yost, Kansas City, Mo.; third, J. W. Coder, Elwood, Neb.; fourth, W. L. Yost, Kansas City, Mo.

Class 48—Junior Yearling Bull: First, Cyrus A. Tow, Norway, Iowa; second, Otto Fulscher, Holyoke, Colo.; third, J. W. Coder, Elwood, Neb.; fourth, A. B. Cook, Townsend, Mont.

Class 49—Senior Bull Calf: First, W. L. Yost; second, Thompson Bros., West Point, Neb.; third, John E. Painter & Sons, Roggen, Colo.; fourth, Otto Fulscher.

Class 50—Hereford Junior Bull Calf: First, Dr. T. F. DeWitt, Parshall, Colo.; second, W. L. Yost, Kansas City, Mo.; third, A. B. Cook, Townsend, Mont.; fourth, Otto Fulscher, Holyoke.

Class 51—Hereford Cow, 3 years old, or over: First, W. L. Yost, Kansas City, Mo.; second, A. B. Cook, Townsend, Mont.; third, Geo. Chandler, Baker, Ore.; fourth, T. F. DeWitt, Parshall, Colo.

Class 52—Hereford Cow, 2 years old and under 3: First, A. B. Cook, Townsend, Mont.; second, W. L. Yost, Kansas City, Mo.; third, Glendale Stock Farm, Aspen, Colo.; fourth, T. F. DeWitt, Parshall, Colo.

Class 53—Hereford Senior Yearling Heifer: First, John E. Painter & Sons, Roggen, Colo.; second, A. B. Cook, Townsend, Mont.; third, A. B. Cook, Townsend, Mont.; fourth, Cyrus A. Tow, Norway, Iowa.

Class 54—Hereford Junior Yearling Heifer: First, A. B. Cook, Townsend, Mont.; second, Thompson Bros., West Point, Neb.; third, Cyrus A. Tow; fourth, T. F. DeWitt, Parshall, Colo.

Class 58—Young Herd: First A. B. Cook; second, T. F. DeWitt; third, Cyrus A. Tow; fourth, Geo. Chandler.

Class 59—Calf Herd: First, John E. Painter & Sons, Roggen, Colo.; second, W. L. Yost, Kansas City, Mo.; third, T. F. DeWitt, Parshall, Colo.; fourth, A. B. Cook, Townsend, Mont.

Class 60—Get of Sire: First, A. B. Cook; second T. F. DeWitt; third W. L. Yost; fourth, Canary, Weston & Canary, Littleton, Colo.

Class 61—Produce of Dam: First, A. B. Cook; second, A. B. Cook; third, Thompson Bros.; fourth, T. F. DeWitt.

Class 160—Pure-bred Hereford Yearling Steer: First, Colorado Agricultural college; second Kansas State Agricultural college, Manhattan, Kan.; third, Colorado Agricultural college.

Class 161—Pure-bred Hereford Calf Steer: First, Dr. T. F. DeWitt, Parshall, Colo.; second, Cyrus A. Tow, Norway, Iowa; third, Kansas State Agricultural college.

Class 162—Pure-bred Hereford Steer Herd: First, Kansas State Agricultural college.

Western Hereford Breeders' Futurity

Class F 1—Senior Bull Calf: First, John E. Painter & Sons; second, Otto Fulscher; third, A. L. Weston; fourth, David Firm & Sons.

Class F 2—Hereford Junior Bull Calf: First, Dr. T. F. DeWitt; second, A. B. Cook; third, T. F. DeWitt; fourth, George Chandler.

Class F 3—Senior Heifer Calf: First, John E. Painter & Sons, Roggen, Colo.; second, A. B. Cook, Townsend, Mont.; third, Geo. Chandler, Baker City, Ore.; fourth, T. F. DeWitt, Parshall, Colo.

Class F 4—Junior Heifer Calf: First, A. B. Cook; second, T. F. DeWitt; third, A. L. Weston, Littleton, Colo.; fourth, Otto Fulscher, Holyoke, Colo.

Champion Bull Calf: Dr. T. F. DeWitt, Parshall, Colo.

Reserve Champion Bull Calf: John E. Painter & Sons.

Champion Heifer Calf: John E. Painter & Sons.

Reserve Champion Heifer Calf: A. B. Cook.

Shorthorn Awards

Champion Senior Shorthorn Bull: F. A. Gillespie & Sons, North Muskogee, Okla.

Champion Junior Shorthorn Bull: Rees & Son, Pilger, Neb.

Grand Champion Shorthorn Bull: F. A. Gillespie & Sons.

Champion Senior Shorthorn Bull (Western Breeders' Class): Maxwell-Miller Cattle Co., Steamboat Springs, Colo.

Champion Junior Shorthorn Bull (Western Breeders' Class): Allen Cattle company, Colorado Springs, Colo.

Grand Champion Shorthorn Bull (Western Breeders' Class): Maxwell-Miller Cattle Co.

Champion Pure-bred Shortborn Steer: Kansas State Agricultural college, Manhattan, Kan.

Class 6—Shorthorn Junior Bull Calf: First, Carpenter & Ross, Mansfield, Ohio; second, Rapp Bros., St. Edward, Neb.; third, Wm. Herkelman, Elwood, Iowa; fourth, C. A. Saunders, Manilla, Iowa.

Class 23—Shorthorn Junior Bull Calf (Western Breeders' Class): First, the Allen Cattle Co., Colorado Springs, Colo.; second, D. Warnock & Sons, Loveland, Colo.; third, Samuel Ball, Wray, Colo.; fourth, D. Warnock & Sons.

Class 9—Shorthorn Senior Yearling Heifer: First, H. Rees & Sons, Pilger, Neb.; second, F. A. Gillespie & Sons, North Muskogee, Okla.; third, The Allen Cattle Co., Colorado Springs; fourth, The Allen Cattle company.

Class 10—Shorthorn Junior Yearling Heifer: First, Carpenter & Ross, Mansfield, O.; second, H. Rees & Sons; third, The Allen Cattle company; fourth, Rapp Bros., St. Edward, Neb.

Class 11—Shorthorn Senior Heifer Calf: First, Purdy Bros., Harris, Mo.; second, Purdy Bros.; third, F. A. Gillespie & Sons; fourth, Rapp Bros.

Class 12—Shorthorn Junior Heifer Calf: First, Rapp Brothers, St. Edward, Neb.; second, Rapp Brothers; third, H. Rees & Sons; fourth, Purdy Brothers.

Class 26—Shorthorn Senior Yearling Heifer (Western Breeders' Class): First, The Allen Cattle Co.; second, The Allen Cattle Co.

Class 27—Shorthorn Junior Yearling Heifer (Western Breeders' Class): First, The Allen Cattle Co.; second, R. G. Maxwell & Sons, Fort Collins, Colo.

Class 28—Shorthorn Senior Heifer Calf (Western Breeders' Class): First, The Allen Cattle Co.; second, D. Warnock & Sons, Loveland, Colo.; third, Colorado Agricultural college; fourth, The Allen Cattle Co.

Cass 1—Aged Bull: First, Theo. Martin, Bellevue, Iowa; second, Carpenter & Ross, Mansfield, O.; third, H. Rees & Sons, Pilger, Neb.; fourth, J. H. Hamilton & Son, Gulde Rock, Neb.

Class 18—Aged Bull (Western Breeders' Class): First, Samuel Ball, Wray, Colo; second, Geo. L. Foxton, Glendo, Wyo.; third, Ralph G. Jones, Elbert, Colo.

Class 2—Two-Year-Old Bull: First, F. A. Gillespie & Sons, North Muskogee, Okla.; second, Maxwell-Miller Cattle Co., Steamboat Springs, Colo.; third, Wm. Herkelmann, Elwood, Iowa; fourth, Carpenter & Ross, Mansfield, O.

Class 19—Two-Year-Old Bull (Western Breeders' Class): First, Maxwell-Miller Cattle Co., Steamboat Springs, Colo.; second, G. W. Ball, Pierce, Colo.

Class 3—Senior Yearling Bull: First, H. Rees & Sons, Pilger, Neb.; second, Rapp Bros., St. Edward, Neb.; third, Wm. Henn; fourth, J. M. Steward & Son, Red Cloud, Neb.

Class 20—Senior Yearling Bull (Western Breeders' Class): First, Wm. Henn.

Class 4—Junior Yearling Bull: First, D. Warnock & Sons, Loveland, Colo.; second, The Allen Cattle Co., Colorado Springs, Colo.; third, Rapp Bros., St. Edward, Neb.; fourth, Purdy Bros., Harris, Mo.

Class 21—Junior Yearling Bull (Western Breeders' Class): First, D. Warnock & Sons; second, Allen Cattle Co.; third, Allen Cattle Co.; fourth, R. G. Maxwell & Sons, Fort Collins, Colo.

Class 5—Senior Bull Calf: First, The Allen Cattle Co.; second, Purdy Bros.; third, H. Rees & Sons, Pilger, Neb.; fourth, D. Warnock & Sons; fifth, C. A. Saunders, Manilla, Iowa.

Class 22—Senior Bull Calf (Western Breeders' Class): First, The Allen Cattle Co.; second, D. Warnock & Sons, Loveand, Colo.; third, Colorado Agricultural college; fourth, Charles Pegman, Eckley, Colo.

Class 13—Aged Herd: First, F. A. Gillespie & Sons, North Muskogee, Okla.; second, H. Rees & Sons, Pilger, Neb.; third, Carpenter & Ross, Mansfield, O.; fourth, Wm. Herkelmann, Elwood, Iowa.

Class 14—Young Herd: First, H. Rees & Sons; second, The Allen Cattle Co., Colorado Springs; third, Carpenter & Ross.

Class 15—Calf Herd: First, Purdy Bros., Harris, Mo.; second, The Allen Cattle Co.; third, Carpenter & Ross; fourth, Rapp Bros., St. Edward, Neb.

Class 16—Get of Sire: First, Carpenter & Ross; second, H. Rees & Sons; third, Purdy Bros.; fourth, The Allen Cattle Co.

Class 17—Produce of Dam: First, F. A. Gillespie & Sons; second, H. Rees & Sons; third, Wm. Herkelmann; fourth, Rapp Bros.

Class 31—Young Herd: First, Allen Cattle company.

Class 32—Calf Herd: First, Allen Cattle Co.; second, Samuel Ball; third, The Cornforth Live Stock Co., Elbert, Colo.; fourth, R. G. Maxwell & Sons.

Class 33—Get of Sire: First, The Allen Cattle Co.; second, The Allen Cattle Co.; third, R. G. Maxwell & Sons; fourth, The Cornforth Live Stock Co.

Class 34—Produce of Dam: First, R. G. Maxwell & Sons; second, Samuel Ball.

Class 7—Shorthorn Cow, 3 Years Old or Over: First, F. A. Gillespie & Sons, North Muskogee, Okla.; second, Carpenter & Ross, Mansfield, O.; third, D. Warnock & Sons, Loveland, Colo.

Class 8—Shorthorn Cow, 2 Years Old and Under 3: First, F. A. Gillespie & Sons, North Muskogee, Okla.; second, H. Rees & Sons, Pilger, Neb.; third, Rapp Bros., St. Edward, Neb.; fourth, The Allen Cattle Co., Colorado Springs.

Class 24—Shorthorn Cow, 3 Years Old or Over (Western Breeders' Class): First, D. Warnock & Sons, Loveland, Colo.; second, Maxwell Miller Cattle Co., Steamboat Springs, Colo.

Class 25—Shorthorn Cow, 2 Years Old and Under 3 (Western Breeders' Class): First, The Allen Cattle Co.; second, R. G. Maxwell & Sons, Fort Collins, Colo.

Class 156—Pure-bred Shorthorn Yearling Steer: First, Kansas State Agricultural college, Manhattan, Kan.; second, Kansas State Agricultural college, Manhattan, Kan.; third, Wm. Herkelmann, Elwood, Iowa.

Class 157—Pure-bred Shorthorn Calf Steer: First, Kansas State Agricultural college, Manhattan, Kan.; second, Wm. Herkelmann, Elwood, Iowa.

Class 158—Pure-bred Shorthorn Steer Herd: First, Kansas State Agricultural college, Manhattan, Kan.

Aberdeen Angus Cattle

Senior Champion Bull: Congdon & Battles.
Junior Champion Bull: Congdon & Battles.
Grand Champion Bull: Congdon & Battles.
Senior Champion Cow: Congdon & Battles.
Junior Champion Heifer: Congdon & Battles.
Grand Champion Cow: Congdon & Battles.

Class 62—Bull, 3 Years Old or Over: First, Congdon & Battles, North Yakima, Wash.; second, Harrison & Harrison, Indianola, Neb.

Class 63—Bull, 2 Years Old or Over: First, Congdon & Battles; second, J. W. McClung & Son, Indianola, Neb.

Class 64—Senior Yearling Bull: First, Congdon & Battles; second, Hadley Bros., Indianola, Neb.

Class 65—Junior Yearling Bull: First, Congdon & Battles; second, J. W. McClung & Son; third, Congdon & Battles.

Class 66—Senior Bull Calf: First, Ed Watkins & Son, Cambridge, Neb.; second, Congdon & Battles; third, J. W. McClung & Son.

Class 67—Junior Bull Calf: First, Congdon & Battles; second, Hadley Brothers; third, Sutton & Porteous, Lawrence, Kan.

Class 68—Cow, 3 Years Old or Over: First, Congdon & Battles; second, Congdon & Battles.

Class 69—Cow, 2 Years Old and Under 3: First, Congdon & Battles; second, Harrison & Harrison.

Class 70—Senior Yearling Heifer: First, Congdon & Battles.

Class 71—Junior Yearling Heifer: First, Congdon & Battles; second, Harrison & Harrison; third, Harrison & Harrison.

Class 72—Senior Heifer Calf: First, Harrison & Harrison; second, Sutton & Porteous.

Class 73—Junor Heifer Calf: First, Congdon & Battles; second, Harrison & Harrison; third, Congdon & Battles.

Class 74—Aged Herd: First, Congdon & Battles.

Class 75—Young Herd: First, Congdon & Battles; second, Harrison & Harrison.

Class 76—Calf Herd: First, Congdon & Battles; second, Harrison & Harrison; third, Sutton & Porteous.

Class 77—Get of Sire: First, Congdon & Battles; second, Harrison & Harrison; third, Sutton & Porteous.

Class 78—Produce of Dam: First, Congdon & Battles; second, Congdon & Battles; third, Harrison & Harrison.

Class 163—Pure-bred Aberdeen Angus Two-Year-Old Steer: First, Congdon & Battles,

Class 164—Pure-bred Aberdeen Angus Yearling Steer: First, Nebraska State college, Lincoln, Neb.; second, Kansas State Agricultural college, Manhattan, Kan.; third, Kansas State Agricultural college.

Class 165—Pure-bred Aberdeen Angus Calf Steer: First, Kansas State Agricultural college, Manhattan, Kan.; second, Nebraska State college, Lincoln, Neb.; third, Nebraska State college.

Champion Pure-bred Aberdeen Angus Steer: Congdon & Battles, North Yakima, Wash.

Class 166—Pure-bred Aberdeen Angus Steer Herd: First Kansas State Agricultural college, Manhattan, Kan.

Galloway Cattle

Senior Champion Bull: H. & G. Croft.
Junior Champion Bull: O. H. Swigart & Sons.
Grand Champion Bull: H. & G. Croft.
Reserve Grand Champion Bull: O. H. Swigart & Sons.
Senior Champion Cow: H. & G. Croft.
Junior Champion Cow: H. & G. Croft.
Grand Champion Cow: H. & G. Croft.
Reserve Grand Champion Cow: H. & G. Croft.

Class 79—Bull, 3 Years Old or Over: First, H. & G. Croft, Bluff City, Kan.

Class 80—Bull, 2 Years Old and Under 3: First, H. & G. Croft; second, C. S. Hechtner, Chariton, Iowa.

Class 81—Senior Yearling Bull: First, C. S. Hechtner.

Class 82—Junior Yearling Bull: First, O. H. Swigart & Sons, Salisbury, Mo.; second, H. & G. Croft.

Class 83—Senior Bull Calf: First, O. H. Swigart & Sons; second, O. H. Swigart & Sons; third, H. & G. Croft.

Class 84—Junior Bull Calf: First, O. H. Swigart & Sons; second, H. & G. Croft; third, H. & G. Croft.

Class 85—Cow, 3 Years Old or Over: First, O. H. Swigart & Sons.

Class 86—Cow, 2 Years Old and Under 3: First, H. & G. Croft.

Class 87—Senior Yearling Heifer: First, H. & G. Croft.

Class 88—Junior Yearling Heifer: First, H. & G. Croft.

Class 89—Senior Heifer Calf: First, H. & G. Croft.

Class 90—Junior Heifer Calf: First, H. & G. Croft; second, O. H. Swigart & Sons.

Class 91—Aged Herd: First, H. & G. Croft.

Class 92—Young Herd: First H. & G. Croft.

Class 93—Calf Herd: First H. & G. Croft.

Class 94—Get of Sire: First, H. & G. Croft; second, O. H. Swigart & Sons; third, H. & G. Croft.

Class 95—Produce of Dam: First, H. & G. Croft; second, C. S. Hechtner; third, H. & G. Croft.

Class 168—Pure-bred Galloway Yearling Steer: First, Nebraska State college, Lincoln, Neb.

Class 169—Pure-bred Galloway Calf Steer: First, Nebraska State college, Lincoln, Neb.

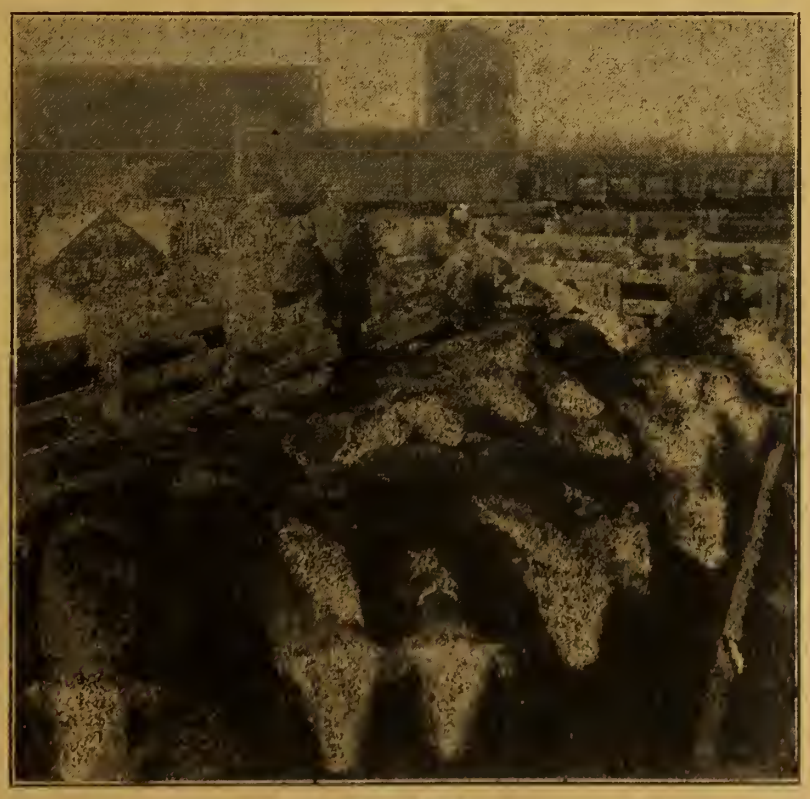
Champion Pure-bred Galloway Steer: Nebraska State college, Lincoln, Neb.

Grades and Crossbred Steers

Champion Pure-bred, Grade or Cross-bred Hereford Steer: Mrs. D. D. Casement, Manhattan, Kan.

Champion Pure-bred Grade or Cross-bred Steer: Mrs. D. D. Casement, Manhattan, Kan.

Continued on Page 18



First Prize Carlot of Registered Bull Calves Bred and Shown by the Hereford Corporation of Wyoming and Sold to Luke Brite of Marfa, Tex., for $300 Each. This Lot Was Made Reserve Champions of the Show.

Alfalfa on Sixteen-Inch Rainfall

Home of A. L. Flemister, Quay County, N. M.

ALFALFA as a hay and pasture crop on the dry land farm has demonstrated its worth to A. L. Flemister of Lesbia, N. M., as will be noted from the illustration occompanying this article. The Flemister ranch is located in northeast New Mexico, at an altitude of about 4,000 feet, with an annual average rainfall of approximately 16 inches, and high evaporation. There is no water for irrigation, except for the garden, all field crops being cultivated by dry farming methods.

The season of 1916 witnessed a hundred-day drouth, there having been no rain of use to plant growth in May, June or July. It was late in August, after heavy showers had revived the crops, that the writer visited the ranch and took the photographs here shown. While the alfalfa in this patch did not make a hay crop, it furnished hog pasture and paid for itself in pork.

Mr. Flemister's report on it is as follows:

"I pastured the pigs in the alfalfa all summer and late in the fall fed them a little milo while they were still on pasture. Then I put them in a floored pen and fed them all the milo they could eat for thirty days, following that with thirty days on corn. Three of the pigs dressed out 275 pounds, one at 400 and another at 475 pounds. I got 47 gallons of fine lard from the five and am carrying my little pigs over, so I can put them on alfalfa pasture early in the spring.

"I sowed an acre and a half of rye, but it is so dry that it will not do to pasture till spring. I did not get to save any alfalfa seed this season, tho I let some go to seed two or three seasons ago and it did fine.

"It is a paying crop, when planted in rows 30 inches apart and cultivated. It will make at least one good hay crop in a normal season, sometimes two, and then give a good yield of seed in the fall. The patch shown in the picture was planted April 20, 1915. I have another field with a much better growth of Turkestan alfalfa; the one shown here is a native variety. The Turkestan makes more hay, but is coarser than the native. I got two good cuttings in 1915 off my Turkestan and good fall pasture in addition.

"I have three acres of Johnson grass, two and a half of alfalfa, one and a half of rye and in spring I will put out an acre of sorghum and one of Sudan grass, so I will have mixed pasture for my pigs in 1917."

Dry Land Alfalfa in Rows on the Flemister Farm.

Care of Engine in Cold Weather

At this time of year much damage is done to automobile engines (and other engines as well), due to pistons seizing the cylinder, is the word that comes from the agricultural engineering department at the Nebraska State University farm.

This causes the cylinder walls to be scored, and in many cases they are practically ruined. The reason for this is that in cold weather cylinders and water jackets warm slowly, while pistons and rings get hot and expand with the first few explosions. Therefore, if the engine is allowed to run at a high rate of speed before the whole engine is warmed up, damage is apt to occur, especially with comparatively new cases which have pistons fitted very tightly.

This condition is aggravated because oil does not run freely. There is nothing to be gained by allowing the engine to race, while there is considerable to lose.

Cut on Mare's Leg

I have a horse which was cut last fall about this time. It is in the hock, and the artery which runs down the leg was cut. I had a veterinarian tie up the artery. It seemed as if proud flesh grew from the inside and a big bunch has formed. We have tried everything that would eat on it, but it seems as if nothing does any good. She is a mare weighing 1,400 lbs., and a good brood mare, but I can not put any fat on her. She seems to be poor from the wound on the leg and I do not think it would be safe to cut it off as it might be swelled around the artery and I do not think any veterinarian around here can do any more than I can. If you think there is any cure for it, please let me know.—I. G. P., Ida.

It is a difficult matter to suggest a treatment for a wound that has been standing so long. However, you might try using nitrate of silver. If the wound is soft so that it can be easily penetrated, burn the wound well by inserting the stick of nitrate of silver about one-eighth of an inch. If it is not soft enough to be penetrated, burn the surface well, and as often as the scab forms take it off and repeat the burning. Continue this treatment for some time and it is possible that the gathering may be materially reduced.

DRY LAND ALFALFA

Biggest money-maker on the farm. Tested, cleaned and recleaned—nothing purer or better can be had. Bartelds is Alfalfa headquarters. We handle enormous quantities. **FREE SAMPLE**, also Big Catalog and Special Price List giving prices on field seeds of all kinds. **FREE BOOK** on ALFALFA. Write at once.

THE BARTELDES SEED COMPANY,
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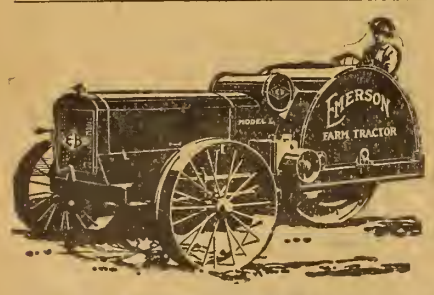

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Model L—12-20 Horse Power

A four-cylinder, 2-speed, light-weight tractor of great power, suitable for any size farm. Will pull the implements you now have on your farm—gang plows, harrows, mowers, binders, manure spreaders, road drags or graders. Will also operate your ensilage cutter, feed grinder, circular saw, etc. Does more work than horses—costs less and is so simple anyone can run it.

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This is the Small Tractor You've Been Waiting For

HERE'S a tractor, the Advance-Rumely "8-16" that was especially designed to fit the needs of the small and medium size farm—a small, light weight, kerosene burning outfit to meet the demand where the famous Rumely OilPull is too large.

The "8-16" is easy to handle, economical and durable. It supplies reliable power for every farm job, and just as important, it is made by a company with an established reputation for dependability.

It is a real one-man outfit—tractor and plows are combined in one machine, and full control is from the driver's seat. With the Advance-Rumely you plow the same as with a horse gang, the plows are where you can always see what you're doing. Also you can back up with your plows, make short turns and cut square corners.

Kerosene for Fuel

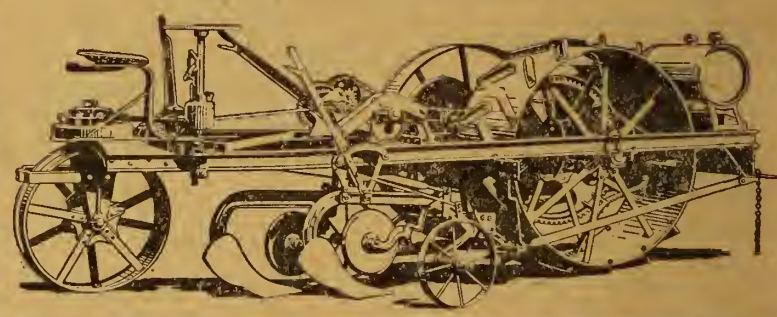
Kerosene is its fuel, and it burns kerosene, not as a makeshift proposition, but continuously and at variable loads as well as full load.

An Advance-Rumely "8-16" not only will plow, but it will draw your discs, drills, harrows, mowers and binders, and on the belt it will run a small separator, hay baler, silo filler, sheller, feed grinder, etc. In fact, it will deliver the same reliable, steady power on all jobs—draw-bar or belt. When used for other jobs than plowing, the plows are quickly detached.

The powerful four-cylinder motor and the entire machine is Advance-Rumely built throughout. It comes from the same shops that build the well known OilPull tractor, the Ideal separator, and all the other dependable machines in the Advance-Rumely line.

Write our nearest branch for a special catalog on this new Advance-Rumely outfit.

ADVANCE-RUMELY THRESHER CO.
LA PORTE (Incorporated) INDIANA
Address the branch nearest you
Kansas City, Mo.—Billings, Mont.



See Our GROWTH!

The Farmers Life Insurance Co.
Denver, Colorado

	1913	1914	1915
ADMITTED ASSETS	$255,960.29	$649,128.22	$876,270.02
LIABILITIES			
Policy Reserves and Other Liabilities	$ 5,848.97	$124,695.31	$288,930.26
Capital Stock	117,648.00	219,900.00	254,756.00
Surplus	132,463.32	304,532.91	332,583.77
Total Liabilities	$255,960.29	$649,128.22	$876,270.02

Next annual statement will show assets of more than $2,500,000, with $17,000,000 insurance in force

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Both Sides of Seed Legislation

SUMMARY OF BILL AND THE OBJECTIONS

The Boulder and St. Vrain Valleys Agricultural-Commercial association has issued the following information regarding the pure seed bill now pending in the Colorado legislature:

"The bill as it stands closely follows the model seed law approved by commercial seed analysts thruout the United States and from the U. S. Department of Agriculture. It is a bill which can be enforced and which provides a way in which the buyer of seed can know absolutely what is being bought. Laws of more drastic nature are in force in some states, but the report from such states is to the effect that difficulty of enforcement renders them more or less ineffective."

An outline of the bill follows:

Sec. 1. Defines Field and Garden Seeds. Field seeds are general farm seeds, such as grains, corn, forage crops, etc. Garden seeds are those commonly grown for garden and trucking purposes, such as onions, melon seeds, cabbage, lettuce, etc.

Sec. 2. Provides that no seed in one-half pound packages or more can be sold or exposed for sale unless the container is plainly labeled in English language, stating:

1. The commonly accepted name of such seed.
2. The percentage of germination within 10 per cent, with date of test.
3. The name and approximate number of noxious seeds, when such seeds are present at the rate of or in excess of 90 seeds per pound.
4. The percentage of purity which shall be within 2 per cent by weight.
5. Name and address of dealer, agent or persons selling seed.
6. The state or foreign country where seed is grown. If in Colorado, the regional area must be named unless plainly marked "unknown."

Sec. 3. Provides that mixtures shall be so labeled. The same information is required as in Sec. 2. par. 1 to 5.

Sec. 4. Provides that seed may be sold if plainly labeled "Not Clean Seed" or consigned to dealers for the purpose of cleaning.

Sec. 5. Pertains to the importation of seed for personal use and its certification by another state or federal board, or its testing by the Colorado Agricultural Experiment Station.

Sec. 6. Provides a penalty for violation of the act.

Sec. 7. Provides that the Colorado Agricultural Experiment Station shall make tests, inspect seed and generally provides for administration of the act.

Sec. 8. Provides how salaries of agents appointed to carry out the act are to be paid.

Sec. 9. Provides that any citizen of the state may have seeds tested by the Colorado Agricultural Experiment Station under reasonable rules to be adopted by the station.

The remaining sections provide for enforcement of the law through the state's attorney general; for annual reports and for appropriations of $1,500 to equip a seed testing laboratory at the State Experiment Station and $4,000 a year for carrying out provisions of the act.

Seedsmen State Objections

The larger seedsmen say they all approve and welcome a seed bill that is of real benefit to the planter and does not work unnecessary hardship on them. They object to some of the provisions of the Pure Seed Bill now pending before the Colorado Legislature. They say the main object of this bill is to prohibit the dissemination of noxious weeds and the preventing of the misbranding of seeds, as well as, of course, provide purity of type and good germination.

They claim this bill does not benefit the planter who uses every effort to obtain seed for planting purposes free from weeds, who takes pains in destroying all noxious weeds on his farm, inasmuch as his neighbor may buy and plant seeds containing any amount of weed seeds, provided the container of the seed is marked on the outside "Not Clean" or "Not Tested" or both clauses. It does not protect him from the dealer who handles a cheap grade of seed for the same above reasons.

The bill should be so worded, they say, that it includes or prevents all planting, as well as the sale, or distribution of seeds containing noxious weeds. There should also be a provision made that the Agricultural College approve any prosecution.

Some of the hardships that the seedsmen claim that this bill imposes is to state on all garden seed labels the weed seeds contained, if any. They assert that it is unreasonable to consider it necessary to label garden seeds with the percentage of weed seeds, as there are very rarely any weed seeds mixed with garden seeds. Should there be any, it would not make any material difference, because vegetables are always cultivated.

To list the names of all the weed seeds in the field seeds would necessitate any amount of work, without any benefit to the planter, who desires to know only the purity of the seed.

Another objection is to give the name of the locality where all field seeds are grown. Certain field seeds are bought on the open market, and it is absolutely impossible to learn where the seed is grown. This also applies to garden seeds that are imported from foreign countries. The seedsman can easily say in what state the seed is purchased, but it would be impossible for him to state definitely where grown, and must rely entirely on information given him, if at all obtainable.

Another objection also made, is giving the name of the locality where certain garden seeds are obtained. The source of supply is always considered a trade secret. A dealer may obtain a specially good strain in a certain section, but under this law must publish this information, which is a great benefit to his competitor, and of no material value to the customer. The importer of foreign grown seed has absolutely no personal knowledge of where the seeds were grown as to warrant him to make any guarantee or statement on a label.

In conclusion, they say, that there should be a provision to prohibit the planting as well the sale of seeds containing noxious weeds, for the object is to prohibit the dissemination of noxious weeds and to encourage pure seeds, and as it is worded so it will permit anyone to sell seeds containing weeds, provided, the containers are marked "Not Clean" or "Not Tested."

According to a report from W. R. Reeves, agriculturist for Crook county, Wyo., the farmers in that section are taking an active interest in the Federal Farm Loan law. Two associations of borrowers have already been formed, and at the time of reporting, seven other localities had scheduled meetings at which Mr. Reeves was to advise the farmers in regard to organization details.

No Other Six Resembles Hudson Super-Six

Don't Be Misled—It Is a Hudson Invention

Sixes have come into renewed popularity since the Super-Six won the top place. But the Super-Six invention—controlled by our patents—added 80 per cent to the six-type efficiency. And that 80 per cent is what gave it supremacy, when the V-types threatened to displace the Six.

Late in 1915, remember, the Six was a waning type. Even the Light Six, which Hudson gave first rank, had revealed some vital engineering limitations.

It had not solved the problem of motor vibration. It had not minimized friction and wear. Its endurance had proved disappointing.

Sixes at that time held hardly a single record. They were mostly held by Fours.

And leading engineers, including the Hudson, were seeking a remedy in Eights and Twelves. At that time the Six, for high-grade cars, seemed verging on displacement.

What Saved the Day

It was the Super-Six invention, remember, which then saved the day for the Six.

Hudson engineers discovered the shortcoming. By a basic invention they corrected the fault. They ended nearly all the vibration. They doubled the motor's endurance. Thus they created a motor which has since won all the worth-while records.

But that doesn't mean that the old-type Six is any better than it was.

'Twas the Super-Six That Won

The Super-Six, in a hundred tests, has out-performed all other motor types. It has not merely broken records. It has made new records which, a year ago, no man considered possible.

It broke the 24-hour endurance record by 52 per cent. It broke the transcontinental record twice in one round trip. A Super-Six touring car went from San Francisco to New York and back in 10 days and 21 hours.

It beat twenty famous rivals up Pike's Peak. It broke all stock-car speed records, and all for quick acceleration.

Then, after 7,000 record-breaking miles, it showed itself in new condition. Not a part or bearing showed evidence of wear.

No other motor ever built has shown anywhere near such endurance.

All By Saving Waste

The Super-Six develops no more power than other like-size motors. It simply delivers more. It almost eliminates motor friction and wear by ending nearly all the vibration.

That vibration, which wasted power, was the great fault of the Six. It is that which led to the Eight and Twelve as a possible solution. Any motor in which that fault remains can't compare with the Super-Six.

A New Gasoline Saver

The Hudson Super-Six, in endurance and performance, stands foremost in the world. The new style bodies which we have created make the car look its supremacy. A new exclusive feature—a gasoline saver—gives it this year another advantage.

It now outsells any other front-rank car. It has 25,000 enthusiastic owners, who know that no rival can match them.

You can prove in one hour, at any Hudson showroom, that this car deserves its place. And that no other car, at any price, can be classed with it. Do that before the spring demand overwhelms us.

Phaeton, 7-passenger, $1650	Touring Sedan . . . $2175	Town Car $2925
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HUDSON MOTOR CAR COMPANY, DETROIT, MICHIGAN

Report on Two Potato Meetings

W. R. McCLELLAN

THIRD ARTICLE

MR. CLEVELAND has visited every country in Europe that grows potatoes and met many of the big seed growers, getting ideas from them. He and W. C. Brown, who was until three years ago president of the New York Central railroad, are the originators of the pure seed propaganda that is now sweeping the country. Brown, too, took a trip to Germany and put into practice their methods of growing a seed plot and roguing out the weak hills, and he increased his yield 25 per cent. Now the colleges in Maine, New York, Wisconsin, Michigan and Minnesota have taken it up and are doing some very effective work. The individual may get a good strain of strong seed and get careless; some have, and their seed has run down. But the college will not do that. In Wisconsin last year 174 applied to go into the production of certified seed and only 88 got the college certificate. Some did not have pure seed and could not enter. Some let bugs and beetles hurt the crop. Some did not spray according to college rules and had over 3 per cent disease. Only 50 per cent came thru according to the rules.

The college expects 99 per cent pure seed, but they only guarantee 97 per cent. They said they tried to rogue out every diseased or weak hill, but might accidentally leave one or two, so they say 97 per cent guarantees. They do very faithful work and the increased yield this seed is bringing, 25 to 40 per cent, makes it bring the price. In 1915, late in spring, Wisconsin got 4 cents a pound for this seed. There were more acres in 1916, but owing to the big frost, not so many bushels as the previous year.

An Ideal Potato Climate

Aroostock county has an ideal climate for potatoes. In July and August they have a heavy fog that comes on early in the morning day after day, lasting until 10 or 10:30, when it raises. This fog is often so heavy that it drips from the trees and potato vines. This, with a nice rain occasionally, is an ideal condition to grow spuds, but this same fog also brings some diseases we do not have, and they must spray to overcome this. They count the cost of the spraying material alone at 50 cents per acre, in addition to the time. New York and Wisconsin have to spray, too.

Mr. Cleveland, Agriculturist Welsh of the New York Central; in fact, all the big growers I met, and the experts, both in the government service and out, are sure this pure seed movement will cover the whole United States and not only increase the yield and lessen the cost of production, but also very materially improve the quality and so increase consumption.

The colleges in the east are doing a wonderful work in potato growing; urging better ground, better seed; planting 12 inches apart in the row and the result is a much smoother quality. Dr. Stuart of the U. S. Bureau of Plant Industry, has been preaching that to me for the last three years. He said: "If you do not plant closer in the row and raise a smoother article you will have a crop on your hands soon that you cannot sell."

What Greeley Must Do.

My trip has convinced me he is right and when there comes a year with a normal crop over the whole country, Greeley will be left, as Dr. Stuart says, unless they, too, go into closer planting and raising a smoother and evener potato. In looking over the markets in Boston, New York and Washington, where I saw them make a difference of $1.20 more per bushel for smooth, even potatoes over a poorly sorted, uneven lot, it showed very plainly where we would land some day.

In all these places, they said if the farmer left 30 per cent or even 40 per cent at home and sent only the other 60 to 70 per cent, they would have more clear money. They all told how hard it was to get the kind of stock the market called for.

Choice potatoes and apples in Washington were selling at the same price per peck; the first time I ever saw them at the same price.

The National Meeting.

The National Potato Growers' annual meeting began November 13th at Washington, D. C. The forenoon was devoted to a meeting of the executive committee. It was not a growers' meeting, as nly a few practical growers were present. It was a meeting of experts. and there was very little to appeal to the practical grower. I met a lot of experts and was not sorry I went.

The discussion on standard varieties was all worth while. They endorsed for growing three varieties for late, the Rural, Green Mountain and Netted Burkank. For early, Bliss Triumph, Irish Cobbler and Early Ohio, and recommended that growers confine themselves to the variety that suited their locality. They spent an afternoon on how to use up culls and cheap potatoes in silage, potato flour and starch, and we went the next day out to Arlington to the Government farm to see the operation of a German machine that cost $7,000. It looked all right, but the trouble was they had to have potatoes at 12 to 15c per bushel to run it, and that does not come more than once in five or six years, and the rest of the time the plant would be idle. I said to Prof. Stuart that it did not look to be a paying proposition. He said, "No, but a few years ago when potatoes were so cheap the colleges sent up such an appeal that we tried the experiment."

During the intermissions I visited the wholesale and retail stores. The stock of potatoes was rather poor, mostly home grown. They had three grades of culls, 1⅞ to 2¼ and larger. Retailers asked 30c, 40c and 60c per peck. One wholesaler said he had a car of State of Maine in the week before and sold it in a day right from the car. They sold to the best trade for 75c per peck, or $3.00 per bushel. Maine ships to New York and Boston in Eastman cars that are owned by the Boston & Maine railroad, and they will not let them go beyond the N. Y. & N. H. R. R. The railroad charges $15.00 per car in addition to the regular rate, so they told me in Houlton. There were none in the yard the day we were there, but we passed them in trains on the way. They are heated with oil stoves and have a thermometer in the door, so train men can see how the heat is inside and then regulate it from the outside. The railroad guarantees safe delivery or pay for them.

Potatoes were very poor all over except in Maine. This is why they are so high. In Washington nor in New York City did we get any good potatoes, in either the hotels nor with the

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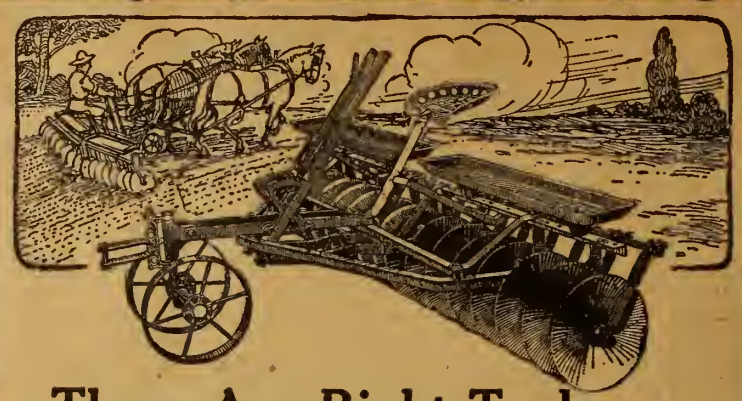

These Are Right Tools

WHAT you do for your seed beds before the crops go in has so much to do with the yield and quality you reap at harvest time that it pays to go slow and **be right in choosing your tillage implements.** That is why farmers everywhere—your neighbors among them—are using International Harvester disk harrows, peg and spring-tooth harrows, cultivators, etc.

At your I H C dealer's store is your opportunity to find out about these. There you will find disk harrows with rigid lasting steel frames, with gangs made to be level at all cutting angles, bearings with four wears, built correctly as to adjustments, seat and levers. You'll find double harrow attachments, forecarriages, transports, everything to just suit you and your fields, even though they be hilly, stony or of any sort of unusual soil.

Take note of what has made the peg and spring-tooth harrows popular with men who want crops as big as they can be made. Pegs that never wear loose. Oil-tempered spring teeth fastened on steel pipe bars to stay. Runner teeth and transports, easy-set levers, riding sulkies, etc.

Be careful in buying tillage tools and be sure to study the International Harvester line. We have catalogues that will interest you.

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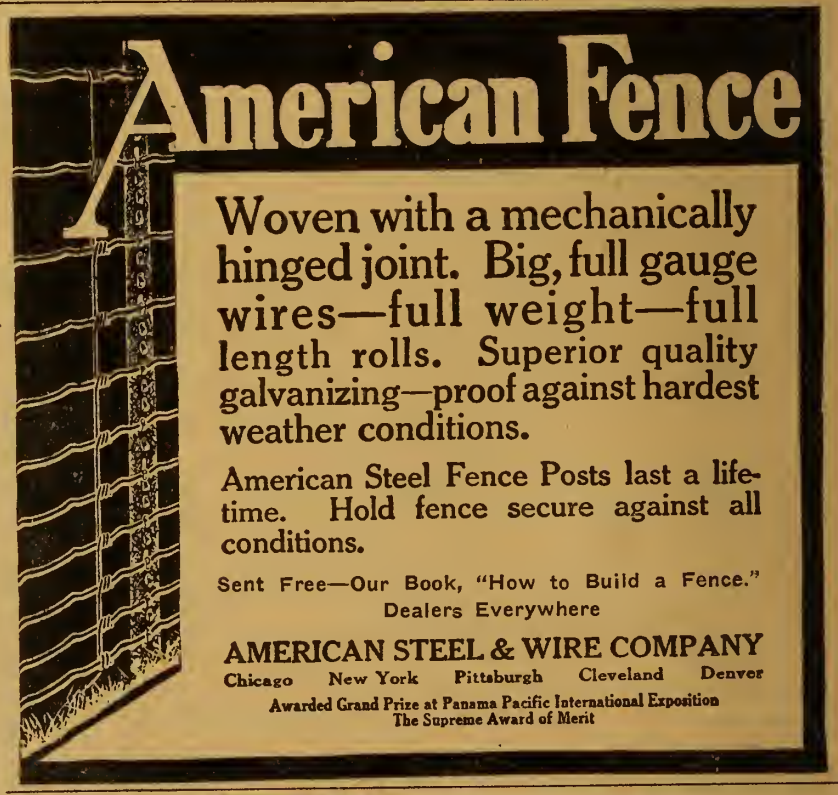

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American Steel Fence Posts last a lifetime. Hold fence secure against all conditions.

Sent Free—Our Book, "How to Build a Fence."
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Awarded Grand Prize at Panama Pacific International Exposition
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Year of Years to Plant Potatoes
Let the Aspinwall Do the Work

The *only* correct drop. *A one-man, Automatic Potato Planter.* Saves expense of extra man. Does *all* the work—*all* the time. Plants *more acres* per day—opens the furrow, drops the seed, any size, any distance, marks the next row—all in *one operation.* 65,000 now in use. Plant the *Aspinwall way.*

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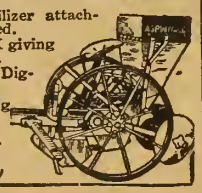
Corn, pea, bean and fertilizer attachments furnished when wanted.
Send today for FREE BOOK giving facts how to plant for profit.
Cutters, Planters, Sprayers, Diggers, Sorters.



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World's Oldest and Largest Makers of Potato Machinery

Letz Self Sharpening Plates

Running empty does not injure them—actually puts on an edge. One set of Letz plates will grind **1000 to 3000 bushels**—outlast 3 to 6 sets ordinary plates. **Silent running** and self-aligning. Letz grinds all grain and forage crops fine as dust in one grinding—ear corn, snapped corn, oats, wheat, alfalfa, clover, etc. Make your own appetizing combination stock foods and save fifty per cent waste in feeding roughage. **10 days free trial.** Valuable Feeding Book mailed free.

LETZ MFG. COMPANY
113 East St., Crown Point, Ind.

160 ACRE FARMS IN WESTERN CANADA FREE

Canadian Farmers Profit From Wheat

The war's devastation of European crops has caused an unusual demand for grain from the American Continent. The people of the world must be fed and wheat near $2 a bushel offers great profits to the farmer. Canada's invitation is therefore especially attractive. She wants settlers to make money and happy, prosperous homes for themselves by helping her raise immense wheat crops.

You can get a Homestead of 160 acres FREE and other lands at remarkably low prices. During many years Canadian wheat fields have averaged 20 bushels to the acre—many yields as high as 45 bushels to acre. Wonderful crops also of **Oats, Barley and Flax.**

Mixed farming as profitable an industry as grain raising. The excellent grasses full of nutrition are the only food required for beef or dairy purposes. Good schools, churches, markets convenient, climate excellent.

Military service is not compulsory in Canada, but there is an extra demand for farm labor to replace the many young men who have volunteered for the war. The Government is urging farmers to put extra acreage into grain. Write for literature and particulars as to reduced railway rates to Supt. of Immigration, Ottawa, Canada, or

J. L. PORTE
Dunn Block, Great Falls, Mont. Canadian Gov't Agt.

College Makes Fine Showing

Colorado Agricultural College made its best showing at the Stock Show in connection with its exhibit of swine, while the exhibits of beef cattle and dairy cattle were both creditable, and a number of blues were secured. It is the record with swine that marks itself as a real achievement in breeding as carried on at the college. The swine exhibit at the show was larger than any year heretofore, winning herds from the corn belt being in competition. Mr. N. H. Gentry, the famous Berkshire breeder, was judge. The judging started out with Berkshires, and exhibitors were particularly fortunate in having judgment of a man of Mr. Gentry's experience on a class of stock in the breeding of which he has led the country for a generation.

The Agricultural College won first and second on boar under a year, third on boar under six months, third on aged sow, first on senior yearling sow, second on junior yearling, first and second on sow under a year, first on young herd, first on young herd bred by exhibitor, first on get-of-sire and junior champion boar. This is a remarkable showing, considering there was one herd in competition which had made prominent winnings at the fall fairs and the International. The College did not show barrows, having dropped almost entirely out of fat stock competition.

The Berkshire judging was followed by the judging of Poland Chinas, in which the College won second on aged boar, first on boar under six months, first and second on senior yearling sow, first on sow under a year, second on aged herd, first on young herd, first on young herd bred by exhibitor, first on get-of-sire, junior champion boar and junior champion sow.

The Duroc-Jersey judging was probably the hottest competition of the show, and the College took second on senior yearling boar, first on under-a-year boar, second on aged sow, first on senior yearling sow, second on sow under a year, first on young herd and senior champion sow.

All the stock winning was bred, as well as fitted, by the College with the exception of herd sires, which the College is permitted to show without having bred them. The grand champion sow shown by Mr. Caldwell Martin of Edgemore Farm, Littleton, Colo., was bred by the College and sold to Mr. Martin a few weeks before the show.

In dairy cattle the number of head shown was much smaller than with hogs. The College carries four breeds of dairy cattle, and most of the herds have been built up within the last two or three years. The College is limited to showing animals which it has bred, not being allowed to bring into competition animals which it has purchased. This puts the institution upon an educational basis in requiring them to do constructive breeding in order to make good in the show ring.

Five Holsteins were exhibited, first prize being secured upon senior bull calf.

Four Jerseys were exhibited, winning second prize on junior yearling bull, and second prize on junior calf.

Two Guernseys were shown, resulting in first on senior bull calf, first on senior yearling heifer, and second on produce of dam.

In the beef cattle classes, another hard problem was encountered, in view of the fact that herds owned by some of the most prominent and wealthy breeders of the country were in competition, and the College must take into competition only animals of its own breeding from herds numbering from eight to one dozen cows of a breed. It is the belief of those in charge of the live stock work at the College that, in spite of these handicaps, much better work will result by coming into open competition in breeding classes than by the fitting of fat steers; so only a very small number of steers are shown each year. Four head were exhibited by the College, resulting in first and third on Hereford yearlings, and reserve champion Hereford steer. In breeding Shorthorns three head were shown, the College winning sixth on senior bull calf in open class, and third in the Western, seventh on senior heifer calf in the open and third and sixth in the Western.

Three Hereford calves were shown, the junior bull calf winning sixth in the Futurity, while the senior heifer calf won ninth in the open class and

There were over fifty head of calves

There were over fifty head of salves in each of the open classes, the Hereford show being one of the strongest ever gotten together in this country. Any bull siring less than a dozen calves a year who can put his progeny within the money at a show like Denver, is entitled to credit as a really good sire. Heir's Anxiety, head of the Hereford herd at the College, and Snow King, head of the College Shorthorn herd, are both entitled to such recognition. Snow King sired the roan Shorthorn bull sold through the auction sale at the Western Show by Mr. B. C. Allen, bringing the top price of the sale, $,200.00.

Watch Your Seed Wheat

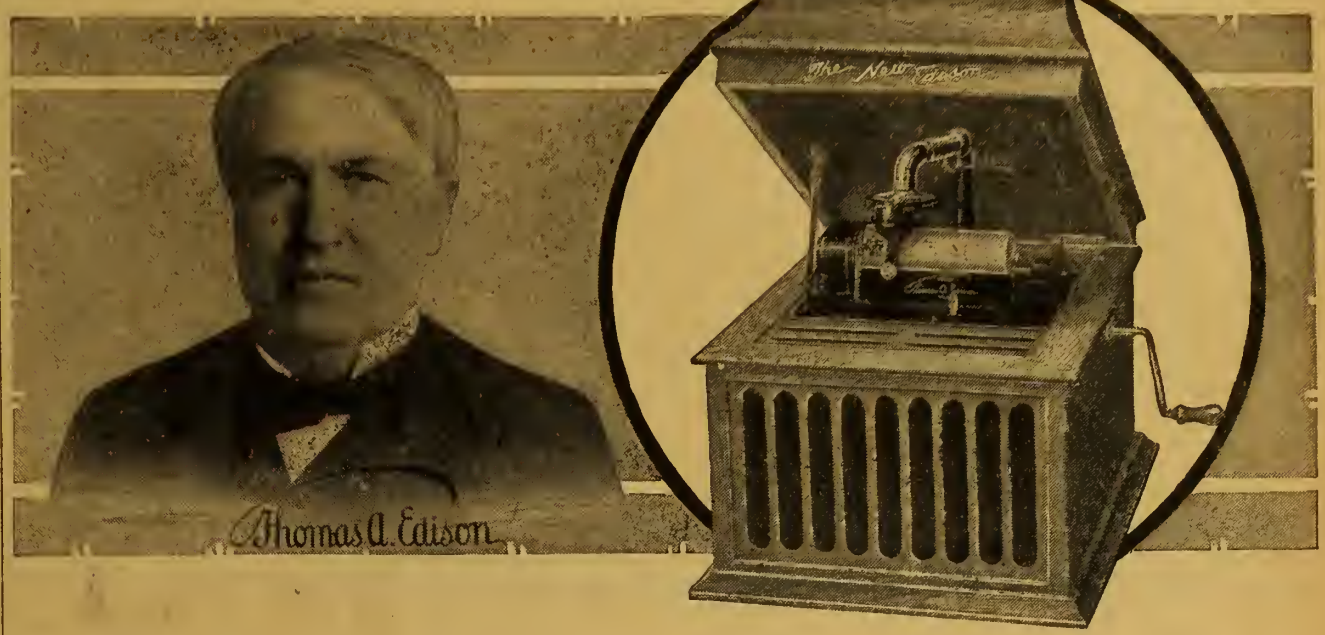
In order to insure themselves a supply of good seed grain for sowing next spring, farmers are advised by the U. S. department of agriculture to bear in mind the following information in regard to the seed situation.

Great Plains Area

The wheat crop of 1916 in the spring-wheat states of the upper Mississippi valley was very badly injured by rust and other diseases. Not only was the yield much reduced, but the quality of the grain was generally very poor. Much of the grain is light in weight, shrunken, and doubtless contains many diseased kernels. Such grain is not good for seed purposes. Although plants may be procured from such seed, they are not likely to be vigorous, and many of them may be diseased, and these diseases will either cause their death before maturity or be spread to other plants, or both.

It is advisable, therefore, for farmers in this region to make sure promptly of a sufficient supply of good plump seed, of adapted varieties, which will grow when sown. If plump, healthy seed can not be obtained the seed that is available should be carefully screened and fanned to remove all those grains that are not good for sowing. In no case should the prevailing high prices tempt the farmer to part with his good seed wheat, and cause him to rely upon shrunken and diseased seed for sowing. Such a course is likely to result in disaster to the 1917 crop.

Big Horn county, Wyoming, grew sugar beets for the first time in 1916 to supply the new sugar factory at Lovell. County Agent Allyn H. Tedmon, in reporting on the season's beet work, says: "A good acreage was put in and all were harvested except some 25 or 30 acres that froze in before pulling. We consider the season quite a successful one, when it is considered that nearly all the growers were new to the crop and labor was scarce and hard to get. The tonnage will run around 10 tons on the average and the per cent of sugar will run from the minimum to over 20 per cent in many cases."



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Appropriation for Extension

Colorado has failed for some years to make any appropriations for general agricultural extension, with the result that counties having no agriculturist are deprived of the benefits of lectures and demonstrations to which they are entitled by reason of their payment of a proportion of state taxes applied to the support of the agricultural college. There is a bill pending for an appropriation of $10,000 that should be passed. The farmers in counties that do not have agriculturists are entitled to extension service and the legislature owes it to the people to give liberal support to any measure that aids in the upbuilding of agriculture.

This state, like others in the mountain region, is witnessing a rapid increase in rural population, especially since the passage of the 640-acre homestead act. The people who are going on these homesteads are, for the most part, inexperienced in the line of agriculture that must be followed if they would succeed. It is the duty of the state to give these newcomers the advice and instruction they need in order to start off right. They cannot go to the Agricultural College, but the information must be brought to them by means of extension lectures and demonstrations.

During the last three or four years the few counties that have taken advantage of the Smith-Lever law and made appropriations for engaging experts, have made satisfactory progress in an agricultural way. This service is being extended as fast as funds are available to counties that are in financial position to avail themselves of the act. However, there will be for years to come a large number of counties that cannot be so served, and it is for the benefit of these localities that provision should be made thru a general state appropriation. There is hardly a state in the Union that does not give agriculture this consideration, and Colorado at one time did its share. Now that state finances are again in normal condition the legislature must make proper provision to finance this important work.

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Bond Issues for Roads

Speaking of bond issues for the purpose of road building, no more logical and sound argument on this question has been presented than that made by R. H. Kiteley, mayor of Longmont, at the Colorado Farmers' Congress. His view of the proposed fifty-million-dollar bond issue is this: Let the people who will use the roads pay for them. That means, if permanent road building is to be done, such as will last for generations, a bond issue is advisable, but to issue bonds, build temporary gravel roads with the money, wear them out in a few years and then expect posterity to meet the principal is unfair and foolish. He contrasted road bonds with those issued for the payment of school buildings. In the latter case the bonds are redeemed by the taxpayers who, as pupils, had the use of the schools. In the case of temporary highway construction the ultimate taxpayer not only pays for the roads of his own day but for those long since worn out by his father or grandfather. Of course, some people say, why worry about what posterity pays. That isn't the point at all. The point is, build permanent roads.

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Ill-Advised Suggestions

As a solution of the difficulties arising from the organization of National Farm Loan associations that are either too large or too small, the following suggestions are offered in a circular letter sent out by W. W. Flannagan, secretary of the Federal Farm Loan Board:

"'As meeting in a measure both these difficulties, the following suggestion has been made, upon which the board looks with favor and is inclined to recommend where practical, viz.:

"Let a number of associations, as many as convenience or local conditions require, be organized in each county and all of them elect a common secretary-treasurer located at the county seat or some other convenient central location. Ordinarily the local banker, an attorney, abstracter, or insurance agent will be found willing to serve for a very small compensation. Each association would have its own loan committee, and to save the common secretary-treasurer the trouble of attending each local meeting, an assistant secretary could be chosen from the membership of each association who would merely keep the records of meetings without compensation. This system if found workable in practice, would result in uniform bookkeeping and enable examiners to find the books of all the associations in a county at one place, thus greatly reducing the cost of examinations."

The fear was expressed further that the secretary-treasurer in small associations would not have vault facilities for proper storage of his papers. This fear may be dismissed with the statement that a good safe may be found in every country store. As to the suggestion about the need of a vault for storing the valuables of a farm loan association, we feel about that a good deal like the darkey who was asked by a white man to change a ten-dollar bill. His reply was, "No, sah, I ain't got the change, but I thanks y' for the compliment, boss."

Some counties may find it advisable to adopt the plan suggested, but it has so many pitfalls and possibilities of danger that it should have been stated in a less conclusive way. Most of the farmers who expect to borrow have in mind associations comprising neighborhoods that can work together harmoniously, where each knows the other. The secretary-treasurer is the executive financial officer of the association. In section 7 his duties are fully outlined, and it is stated that "It shall be the duty of the secretary-treasurer, acting under the direction of the national farm loan association," etc. There is grave danger in cases where Mr. Flannagan's suggestion is followed of saddling upon several small associations virtually a general manager, who will be all-powerful in the county and, instead of being the servant of all associations in that county, is really their master. This might easily come about in the event that an ambitious attorney were selected. And he wouldn't have to do all the work, either, for Mr. Flannagan suggests that assistant secretaries be named by the locals "to save the common secretary the trouble of attending all the local meetings." In other words, that would give the general secretary all the power and force the locals to bring their affairs into his office at the county seat. And we had imagined that the farm loan law was to furnish the farmer a means of getting away from the fellow in town who makes his living off the farmer!

As for the suggestion of appointing an insurance agent as general secretary for a number of associations—well, ask the farmers what they think of that! No, let us stick to the letter of the law. There are farmers in every community well qualified to carry on the executive work of their associations. It is one of the chief objects of the law to persuade them to do more for themselves and be less dependent upon the fellows in town who have been in the habit of constituting themselves the chief financial advisers of the farmer for whatever profit there might be in it. Some of the advice that comes to us from Washington on the subject of organization details shows a lack of appreciation of conditions in the rural districts.

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Co-operation Among Growers

An incident showing the value of co-operation among farmers, especially such as are growing special crops, developed at the recent session of the Colorado Potato Growers' Association. It seems that the Interstate Commerce Commission has for some time had before it applications for readjustment of rates on potatoes from different growing districts of the West. The petition of one section for changes was followed by action on the part of others, until there were nearly a dozen applications pending. President Lou D. Sweet of the National Potato Growers' Association was called to Greeley for the purpose of advising with the growers there in regard to the matter. Later, on meeting some railroad officials, it was suggested to him that it might be well for the potato growers to get together on the question and ask a complete readjustment of potato rates. While in Washington recently Mr. Sweet acted on the suggestion, by conferring with a member of the Interstate Commerce Commission. "Would a resolution from the National Potato Growers help the matter along?" he asked of this commissioner. "'It certainly would," was the reply. Accordingly the resolution was forthcoming, the potato growers of the country being united on the question. Within a few weeks the order from the Interstate Commerce Commission was issued, calling for hearings on the rate readjustment matter. Without the help of their organization it would not be possible for the growers to act concertedly on any question. Standing together, they are able to get immediate action on any matter affecting the industry. What is true of the national organization is equally true of its state subsidiaries. Colorado is now well organized and it is to be hoped that other mountain states where potatoes are grown in sufficient quantities for the general market, will follow suit. The mountain growers should act unitedly because they are working under similar conditions, with the one end of building up a reputation for quality. A few of our growers have been known nationally and internationally for years, because of their advanced methods and results. The Rocky Mountain region is known among experts the world over as being ideal for the production of potatoes. The trouble here, as in other potato sections of America, is that too many growers see only the immediate dollar. It takes time, money and scientific methods to produce a first-class crop year after year, even where conditions of soil are favorable, and careless growers will make this discovery to their cost just as soon as the present movement toward establishing standard market grades gets on a firm foundation. The consumer is beginning to discriminate between potatoes and potatoes. There has been provocation enough to grumble against the dealer and the transportation company, but the marketing end is in process of readjustment. The chief thing that has been ailing the potato industry is poor potatoes and for this the grower is responsible.

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Colorado Farmers' Congress

(Written by W. E. Vaplon and read before the Congress at Fort Collins)

At Washington our wise men sit and make the laws; or gaily flit from desk to desk, and place to place, and smoke into each other's face. They like to joke as well as smoke, especially about the bloke who sows the seed and tills the land, who works and sweats to beat the band, that they may live and not go broke. The farmer raises pigs by work; the politician plays with pork. The farmer raises hay and beans; the other sits upon his jeans and wonders why in Halifax the farmer grumbles 'bout his tax. In Denver sits another bunch who seem to think they've got a hunch that only they can steer the ship of state upon its homeward way. They think prosperity has come, because they're at the helm, by gum, and but for them we'd all go smash upon the rocks of vanished cash. 'Tis true, we need these jolly souls to spend the wealth we pay in tolls, to tell us times are mighty good, to tell us how to raise more food, to keep us in a cheerful mood. But what about the bunch that's met at C. A. C.? It's safe to bet the ship of state with all sails set, will keep her silver bottom wet for some spell yet, when folks like them puff out the sails and take the helm. Congress may meet to make the laws; we raise the stuff to fill their craws. They shout and spout and chew the rag, while we raise kale to fill the bag. Let's all keep step, keep up our pep, find the best ways our crops to raise, teach girls and boys the country's joys, make life worth while with sunny smile, feed Uncle Sam with eggs and ham and let the plutocrats go hang.

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Wichita Farm Loan Bank

Wichita will have its Federal Land Loan Bank by the first of March, according to latest reports received from Washington. The names of the men who will operate the bank and the location of the institution, have not been made public.

W. H. L. Pepperell, collector of internal revenue, who is likely in closer touch with the treasury department than anyone else in Wichita, says he has been led to believe that it is the intention of the department to open the bank here the last of February or the first of March. Beyond this he has no information. He is, however, receiving every day requests for information concerning the workings of the bank and many of the writers say they contemplate borrowing money or investing in the bonds that will be issued by the bank. All these letters are being placed on file by Mr. Pepperell to be turned over to the proper officials on their arrival in this city to take up the work of the bank.

Dan F. Callahan, banker of Kingman, has been mentioned for appointment as chairman of the board of directors of the bank, which is virtually the head of the institution, but this appointment has not yet been made. So far as known here, no other officials for the bank have been appointed.—Wichita Daily Beacon.

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Pinto Bean Clubs

Pinto bean clubs will be organized for the first time during the coming season in southern Colorado. Agriculturist Charles E. Smith of Las Animas county, is the originator of the idea of having boys and girls grow an acre of pintos for seed purposes. Under the project as outlined by Mr. Smith before the Farmers' Congress, the boys and girls that engage in this work are to make a written contract with parents for rental of the land, the child to have the profits accruing from the crop, which is to insure a supply of good seed for the farm. These acre plots are to be used during the season for demonstration purposes, in an effort to show the farmers of the neighborhood the proper type of plant to select for seed, and later the selected plants are to be used to show the selection and hand picking of the seed. The work of the boys and girls of Las Animas county is to become the foundation of a supply of properly produced homegrown seed and at the same time to teach the best methods of growing pintos.

Barber (cutting the Irishman's hair)—Your head is twice as large as mine.

Pat—Av course, pfwat's the use 'av a man havin' a big thrunk whin he hasn't anythin' to put in it?

Comment by Farmer Putnam

GETS A PASS TO STOCK SHOW AND TELLS WHAT HE THINKS OF THE BIG EXHIBITION

Denver, Colo., Feb. 10, 1917.

WE sure did have a show me and Frod. You all remember how me and Fred was gallivantin' around in Fred's auto last fall visitin' them stock breeders and fairs? Well, me and him was workin' up interest in the stock show. Them trips done good alright and Fred sez I earned my pass to the show, so he give me a green badge with a brass pin that said "Press" on it. I stuck it on my coat and everywhere I went they let me in without askin' no questions, just like I was a official of the show. I even got inside the show ring and Harry Youngerman, the superintendent treated me like I was his equal.

Harry is one of the standbys of the show, just like Fred. Them fellers all likes to be called by their front names, just like in the old days when they was ridin' cow ponies on the range, exceptin' that Harry was called Mr. Youngerman beginning 8 o'clock every night with the hoss show, when he wore his glad rags. He slept right on the place all week, never leavin' the job for a minit. When he seen me comin' he yells to the crowd: "Gangway there, lot Farmer Putnam pass." The crowd parted and I went on in and mixed with the big guns just like I was one of them. I done like the rest of 'em and walked up to the cattle in the show ring, punched 'em in the loin, grabbed a hand full of hide and sez to the feller next to me who didn't know no more about it then I did: "Fine animal, but cut a little high in the hindquarters and squints too much with the left eye, but he shouldn't be be disqualified fur that."

"Nope," he sez, "don't agree with you. I got a bull in my herd right out on the range that's got this animal skinned. I could-a cleaned up the blue ribbons with him, if I'd had a mind to fit him fur the show."

Purty soon some feller that was judging cattle turns around and sez hello to me and I seen it was my old friend Prof. Carlyle of Oklahomy, who used to be in Colorado and Idaho. He allus comes to the National Western to judge. He give me a knockdown to Prof. W. A. Cochel of Kansas, who come out west from Pennsylvania a few years ago. I hadn't no more'n got thru shakin' hands with him when up bobs Prof. Bainer. The hull arena was lousy with professors. Bainer is the Santa Fe railroad's expert and he used to live out here in Colorado, too, so he's allus glad of a chanct to come back. Bainer is makin' good in his job. He's one of them steady fellers, buildin' up little by little and puttin' in a good foundation before he puts on the roof. He made a go of it in the Panhandle of Texas and now they moved him up to Topekey and give him the hull system fur his territory. The Santa Fe is awful nice to their employes, exceptin' they makes some of 'em live in Topekey, but they gives 'em passes so's they kin git away from town onct in a while. Bainer is on the road so much that it don't make much difference where he has to live.

He took and introduced me to another feller that used to be with the Santa Fe, Mr. Franklin S. Brooks, manager of stockyards fur Swifts. I reckon he's got plenty to do. Swift's packing house is gittin' to be a big concern, with a large and increasin business, so I reckon they kin afford to pay their managers purty good wages; more then the railroads kin afford to pay, with the interstate commerce commission poundin' 'em on one side and the labor unions on the other.

I hadn't no more'n got thru meetin' Mr. Brooks when here comes Weeks, another professor from Kansas, who runs the experiment farm at Hays, where they got 1,500 head of stock. He was lookin' 'em over with a critical eye, when up bobs Prof. Morton of Colorado. Professors was as thick in the arena as ticks on a Arkansaw steer. One of them ast me how I'd place the animals they was judgin', and right off the reel I sez: "That their bull in the middle is my choice fur the blue."

You see I know what herd he was out of so I just done like a lot of them other assistant judges and give the ribbon to bloodlines instead of the individual. It saves time and trouble.

I've seen lots of cattle judged on their pedigree since I been gittin' around to them shows and fairs in the last ten years. I hain't no orthodox when it comes to cattle. Of course breedin' counts; you cain't git a fust class individual from scrub parents, but I reckon bloodlines is too much overdone by us. A animal ain't allus good because his number is in the herd book. Us farmers has to learn to pick 'em out fur beef and not fur pedigree. The catalogue tells the truth alright, but it don't show everything. Buying bulls by the pedigree is too much like orderin' from the mail order house catalogue. You got to know the goods when you look at the sample and that's the only safe way. That's what the stock show is fur, to learn us how to judge 'em.

Of course it's nice to have a bull that we kin brag about, but braggin' don't bring us the calves. With cattle it's a good deal like the human race. Good care and feed 'll bring a scrub human out purty well, while one that's got blueblood and money behind him and don't git the care and feed goes to the devil. The thing is, no matter what the bloodlines the care and feed has got to be right or we don't git no results.

I ain't in favor of everybody goin' into the breedin' business. Mighty few men has got the sense to be breeders, but nowadays anybody that's got money to hire a herdsman and buy some fancy stock goes in fur improvin' the blood. Let's go a little slow when it comes to buyin' our sires fur the farm herd and look at the breeder as well as the cattle. I ain't a rappin' at nobody in perticular, or no breed in pertickular, but if the shoe fits put it on.

I hung around the dairy division a lot, because they was givin' away milk, and with everything in the west goin' dry I'm gittin' used to them new fangled beverages, and I like milk now about as well as I do water, which ain't sayin' much but, considerin' the past, is considerable progress. Ten year ago if somebody back in Missouri would a told me that in 1917 I'd be hangin' around a milk cooler in a dairy show I'd said he was daffy, bue we all got to come to it and I'm gittin gradually broke in.

If them beef fellers is proud of their cattle, you ought to lissen to a dairy breeder. They got the beef men skinned forty ways when it comes to braggin' up their breeds. It's all milk-flow and butterfat content with them. In hearin' a Holstein man tell it you'd wonder why he don't use that big surplus of milk he gits fur irrigatin' his field crops. And when you lissen to a Jersey man he makes you think that he cain't use the ordinary make of separator because his milk all comes outen the cream spout and they ain't no skimmilk in it. Then they had Guernseys and milking Shorthorns in the show to add to the complications. The Holstein people kept one of their cows in a cage, she was so valuable. She give 24,000 pounds of a milk in a year. If they keep on breedin' that type a man won't have to have more'n one cow to run a big dairy, and it would save lots of work in milkin' and feedin'. Of course they is great danger of over production, so the dairy breeders better hold back a little and let their cows give a reasonable amount of milk, so's not to force down prices.—Thomas Jefferson Putnam.

Where are the fellows who ten years ago laughed at the idea of spraying fruit trees, claiming it was all nonsense and an unnecessary expense?

They are now few and far between. Today, everyone who raises fruit in any quantity, knows that spraying is mighty important—in fact, essential if success is to be attained.

Then—Why not buy and use a MYERS Hand or Power Outfit when you spray—one that has 45 years of pump building experience behind it, and is tested and fully proven, and guaranteed for service before it ever leaves the factory.

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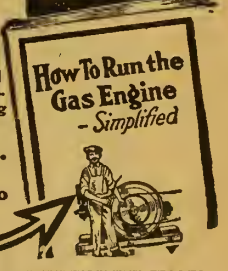

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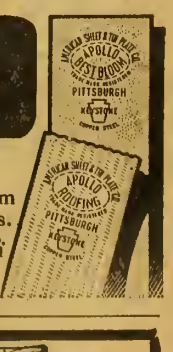

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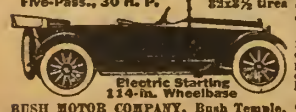

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The Western Farm Life Service Bureau

Our readers are invited to make generous use of the Query Department. Any questions pertaining to animal husbandry and general agriculture will be cheerfully answered. You are also invited to write us any experience that will be of interest to the farmer and stock grower.

In questions relating to diseases of live stock, you should be very explicit in descriptions and in autopsy findings, if such have been made.

Proper Amount of Manure

I have a plot of two acres laid out for garden and fruit. Was in sod last year. I also have enough horse and cow manure to cover about three or four inches deep. It is from three to seven years old. They tell me I must not put on only about one inch. It will be turned under not less than ten inches. Now, what shall I do? Put one or four inches? As we differ here, I will have to take your word for it; that is, I will do as you advise, for I find all things good and all good things in Western Farm Life.—C. C. S., Banco, Colo.

You would probably be applying too much manure to put on an application four inches deep. Excessive application at any particular time produces injury by making undesirable water relations and having a tendency to produce altogether too heavy and coarse growth of vegetation. If the application of manure can be worked into the top soil with a disk harrow, heavier applications may be used than is the case where it is just applied and plowed under. It is better practice, however, to apply a moderate amount and repeat the application in the near future, rather than to apply an inordinate amount with one application. The effects on soil and crops will be better by the former system of treatment.—Alvin Kezer, Chief Agronomist Colorado Experiment Station.

Prairie Dog Exterminator

Will you kindly send me a good and effective recipe for exterminating prairie dogs at a reasonable cost, as I have in the neighborhood of 90 acres of the pests to get rid of?—E. G. Livingston, Wyoming.

One of the most practical exterminators that has been found of late is the Crown Prairie Dog Exterminator, a by-product of coal tar, and is not expensive. A little of this put on a small piece of horse manure, rolled down the prairie dog hole and the hole stopped with dirt, air tight, will generate sufficient poisonous gas to kill the dog. A little bit of it will soon kill out the prairie dogs in an entire town.

Free Traveling Library

I saw in the Western Farm Life where one could obtain the traveling library, but have got the paper mislaid someway, so am writing you for information. Where can I write to get the books and how much would it cost me for six months?—Mrs. A. F. C., Deertrail, Colo.

You should write the secretary of the State Traveling Library, State House, Denver. There will be no charge for the use of the books.

Brome Grass in Alfalfa

I have a small piece of alfalfa that is old and is getting so that the alfalfa does not grow more than 8 or 10 inches high, and it is getting very thin; also the land is very rocky and will be very hard to plow up. Can I, by disking thoroly, sow anything with the alfalfa that will come on and make a crop, such as brome grass or meadow fescue? What would you suggest? I think that the alfalfa has been in the land about 18 or 20 years, so it has got to be renewed in some way or changed to some other crop.—G. R., Montrose County, Colo.

Would suggest that the practical thing would be to plow up the alfalfa and grow some other crop and then re-seed it. You would doubtless secure a fine crop of some other kind on the alfalfa land. However, if the ground is too stony to plow, about the only thing you can do is to disk in brome grass or meadow fescue, either of which makes a very good mixture with alfalfa. I think you will find brome grass preferable.

Dry Land Methods

Our annual rainfall is from 6 to 7 inches; therefore we have to depend entirely on irrigation, altho on some of these creeks where the flow is so irregular it is about as uncertain as dry farming. What I want to know is, whether there have ever been any experiments to determine whether dry farming methods, deep plowing, tilling, etc., can be successfully combined with irrigation; there is an intermittent and limited flow of water for irrigation.—J. B. M., Neiber, Wyo.

Dry land farming methods are practiced by many ranchmen who are farming under irrigation and find that thru the practice of dry farming methods, i. e., deep tilling and intense cultivation, they can grow larger crops with much less water.

Stallions Must Be Licensed

Last fall a neighbor hauled a dead horse over on some land I had rented and was using for pasturing my stock. Later, in talking with him, I learned that the horse had died with the distemper. What can I do about it? I intend to pasture my horses there the coming summer. Will they take the distemper from that? What is the law in regard to standing a stallion? Must he be examined to breed one's own mares? Can a person breed his neighbors' mares without horse being examined? Who must a man apply to for an examination? Must the owner hold a certificate?—W. H. S., Colorado.

There is no danger of your horses taking distemper from pasturing around where the dead horse was dragged.

Before you can stand a stallion it will be necessary for you to make application to the State Board of Stock Inspection, State House, Denver, for blanks which will be sent you and which you can fill out after having had your stallion examined by a licensed veterinarian of the state of Colorado.

The law says nothing about the licensing or examining the stallions for one's personal use, but it would be better to have him examined by a competent veterinarian.

You cannot breed your neighbors' mares without first having your stallion licensed and examined by a licensed state veterinarian. Any licensed state veterinarian is authorized to make examination and to charge a fee not in excess of $3.00 for such service.

Spring Tooth Cultivator

I would like to know how spring tooth cultivators would work in listed ground, in this country. Do they work satisfactorily or not? I would like to hear from any one of the readers that have used them. Can a person cultivate deep enough in this country?—A. St. C., Lincoln County, Colo.

I am afraid you would not find it satisfactory. It works all right where the ground is well tilled and loose, but where the ground has a tendency to be hard, I am afraid you would find it would not go deep enough. This depends, of course, on the way you list your ground. If you list it out in the fall, then in the spring list out the ridges so that the ground is practically all turned, the spring tooth cultivator would work all right.

Rape for Hogs

I wish to plant some rape for hogs in the spring. How could I manage to sow the seed in grain after the grain is up? Would it be all right to sow on top of grain after it is up. Would it come up without covering? Also, how high should grain be to keep rape from getting a start?—F. C. B., Montrose County, Colo.

In the section of Olathe it will usually be possible if land can be irrigated, to follow one of two practices with rape. The first practice would be to seed the rape in the spring into the grain, and then irrigate about the time the grain is removed. Such a practice would contemplate planting a lighter stand than would ordinarily be used for grain. Put in in this way, an earlier starting but less certain stand is obtained. The second method which may be employed is to disk the stubble the same day that harvesting is done, or approximately so, and plant the rape immediately. In ordinary seasons this will make considerable early fall feed. When seeded, the crop should be covered by either drilling, harrowing, or rolling, depending upon soil conditions at the time of seeding.—Alvin Kezer, Chief Agronomist Colorado Experiment Station.

Grubs in Cattle

We have a bunch of cattle and their backs are full of grubs. How do they get there and how do they originate? Should they be removed or not? Do they do any damage to the cattle? What season of the year should they be removed, and give best method of removing them and treatment, if any?—J. P. C., Elizabeth, Colo.

Grubs in cattle originate from eggs laid by a fly, usually on the legs, and are licked off and swallowed by the animal. The egg gradually develops into a grub and works its way up to the hide on the back, where it remains until fully matured and ready to make its way out, which it will do of its own accord if not molested. The grub does not materially injure the cattle, but of course injure the hide. The only practical way to get rid of them is to squeeze them out when they have sufficiently matured, or when the lump is noticed on the back of the animal. No treatment is necessary, as the place will readily heal up.

Iodoform for Sore

A couple of months ago I bought a cow that had run a snag in the flesh just below the eye. It had not been cared for and had developed into a bad sore. I found it almost impossible to dress it without getting the medicine in the eye. I have lately been spraying with boric acid solution, but something seems to be needed to clean out the rotten matter and heal it. I should be grateful to you if you would tell me what kind of treatment to use. The eye is all right, but all the flesh directly under it is diseased and a running sore.—L. R., Lamar, Colo.

The best treatment is iodoform, used on a little cotton and pushed into the sore with a small stick. Give this treatment once daily and the sore will heal up.

Piles in Pigs

Can you tell me any remedy or preventive for the piles in pigs. We have several cases of it here and nearly all prove fatal.—J. C., Utah.

The only practical remedy and preventive in case of piles in pigs is to give them the right ration. Cut out all concentrated feed and change to a mash, and if you have a succulent feed it would be better still. It is well to put up some kind of root crop such as mangel wurzel, sugar beets or other roots that can be grown easily. This succulent feed will keep the digestive organs in better condition.

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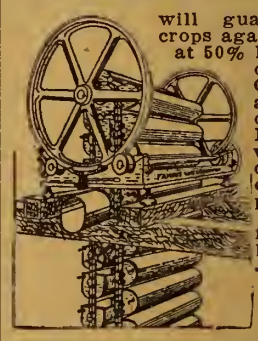

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LEGAL QUESTIONS

The following questions regarding legal matters have been answered by Peters & Barker, Attorneys, Equitable Building, Denver, Colo.:

In the last number of Western Farm Life, November 1, I notice a query from L. P. J., Idaho, in regard to additional homestead. You say that these additions can be made in certain of the western states. Can you tell me what these states are? Does the homesteader live upon the land the three or five years or on the first filing? Also if a homesteader has proved up in one state, but moved to another, can he file on land in his new state?—M. A. W., Idaho.

The states in which the enlarging homestead act is applicable are Arizona, California, Colorado, Kansas, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washihngton, Wyoming and Idaho. Write your district land office for circulars No. 414 and No. 486, which will give you full particulars. If your original homestead is not larger than 160 acres, you are entitled, under the enlarged homestead act, July 3, 1916, to enter such more dry land to bring your homestead acreage up to 320 acres. Residence on and compliance with the law on the original homestead will suffice for the additional tract.

640-Acre Homesteads

In 1916 I filed on 160 acres of land in Boulder Co. and since then I have seen where you could file on 640 acres and would like to know if I could file on any more and if you can file on land that is in a forest reserve.—A. E. P., Boulder Co., Colo.

If the land on which you filed in 1916 is of the same nature as the land described to be taken under the 640-acre homestead act, you may then file on sufficient more land to bring up your acreage to 640. However, if your 160-acre homestead is agricultural land, you would not be allowed to file on more land under the 640-acre act. Only 160 acres can be taken in the forest reserve.

Hogs May Not Run at Large

If I turn hogs out and they get in a neighbor's crop and destroy a lot of it can he collect damages?—Arch Holtz, Colo.

Section 150 of the revised statutes of Colorado: "No hogs or swine shall be permitted to run at large, and the owner of any hogs or swine trespassing on the property of any person shall be liable in treble the damages occasioned by such trespassing or a fine of not less than $5 nor more than $10 for each offense." It would be advisable for you to keep the hogs confined.

Proving Up on Homestead

Please send me the information I wish concerning my homestead. My filing on 320 acres was allowed October 22, 1914. I had my house built and lived on homestead about two weeks before my filing was allowed. Have 40 acres under cultivation. Can I prove up in May, 1917, or in October, 1917?—B. R., N. Mex.

It will be necessary for you to prove up in October, 1917. You do not get credit for the five months leave of absence on time required to prove up, but the time must run consecutively from the date on which you established your home on the land.

Land for Road

I own 160 acres of homestead land near Sterling, Colo. Never had it fenced. I want to fence it soon. Am I obliged to give any ground for a road on the section lines?

What is a lawful fence in Colorado?—F. W. P., Calif.

You are not obliged to give any ground to the county for a road unless the road is on a section line, and was laid out before the land was homesteaded; that is, while it was government land. Otherwise the county board would have to appoint road viewers and pay the damages.

There are many kinds of lawful fence in Colorado. However, outside of the mountain country, the only ones that are of any interest are the wire fences. The following are lawful wire fences: Three barbed wires with posts sixty feet apart, and with stays every ten feet, or a three barbed wire fence with posts thirty feet apart with one stay between. Other lawful fences referred to are board or wooden fences, but there are very few of those.

Can Be Contested

(1) A fellow filed on a piece of land in 1913; has 40 acres broke and has no house on it, and never lived a night on it. Can it be contested or can he prove up?

(2) If a man files on 320 acres of dry land, can he take another 320 acres under the 640-acre homestead act?

(3) Can a woman whose husband is separated from her and she has not got a divorce, hold a piece of land as a homestead?—H. L. C., Colorado.

(1) The land certainly is open to contest since the entryman has not complied with the homestead laws by not living on the place as required.

(2) If the 320 acres filed on is agricultural land; no more land can be entered under the 640-acre homestead act. If, on the other hand, the original 320 acres is land similar to that described in the 640-acre homestead act—land suitable for grazing and forage crops only—then the party could file on sufficient more land to bring his acreage up to 640 acres.

(3) If deserted by husband, yes.

Cannot Take More Land

I would like to know if I can take another 320 acres of land. I have 320 acres of land in El Paso county, Colorado. Can I take another 320 acres under the 640-acre homestead act?

If the 320 acres that you have already entered is of the character of land described in the 640-acre homestead act, then you can take 320 acres more. However, if your 320 acres consists of agricultural land, you would be unable to enter any more land under the new act without relinquishing your original entry back to the government. Land to be entered under the 640-acre homestead act consists of that which is adapted to the raising of livestock and growing of forage only.

Can Hold Land

Can the railroad company hold legally grounds for station in dry farm section, when the law says: "If they don't file their rights in one year from date of land entry their rights are null and void"? Is there any other way they can hold my land?—H. F. S., Idaho.

Railroad grounds are generally acquired either by filing made by the railroad company on government land for that purpose, or if the land is already occupied, by getting a deed to it. If they have properly filed their right of way in the local United States Land Office, and used the land under their filing, it belongs to them.

Widow Can Prove Up on Entry

(1) Please tell me if a widow with children to care for can take a homestead and then in a short time after filing, she gets married and the man she marries is holding a homestead, can she make final proof on her homestead and get their patents if they comply with the laws in perfecting their entries?

(2) Can a 18-eight-year old girl take a homestead or not? Please advise me if she can in this part of the country or in an adjoining county.—J. R. J., San Miguel Co., Colo.

(1) The marriage of a homestead entryman to a homestead entrywoman, after each shall have fulfilled the requirements of the homestead law for one year next preceding such marriage shall not impair the right of either to a patent, but the husband shall elect under the rules prescribed by the Secretary of the Interior, on which of the two entries the home shall thereafter be made, and residence thereon by the husband and wife shall constitute a compliance with the resident requirements upon each entry. It is necessary, however, that both parties make affidavits describing their entries and showing the facts as to residence, cultivation and improvements already made therewith. This matter can be taken up with your district land office.

(2) No, an 18-year-old girl cannot take a homestead in that or any other county. She must be 21 years of age before she can take advantage of the homestead law.

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That's what every man does who owns *Properly* Terraced, Ditched, Tile Drained or Irrigated Land. And if you don't want to sell, your increased yearly profits are just like turning waste land into cash. Progressive land owners in every State and practically every county in the Union have discovered that the *only* way to bring their land up to the desired state of production is to get a

Bostrom $15 Farm Level

and make spare days the most profitable days. Also fills the bill for Grading, Road Building, Foundation Work, etc.

The Bostrom Farm Level has been on the market over thirty years, the latest improved having a *Telescope* with *Magnifying Lenses* which enable you to see the cross on the Target a quarter of a mile away. Man Size Tripod, Leveling Rod, Target, Plum-Bob and full instructions included. Weight, 15 pounds. It is used and *endorsed* by Agriculture Schools and U. S. Farm Demonstration Agents, and you will endorse it, too, after using it—if not *Your Money Back*, including express both ways. Write today for description of *Level* and *Telescope* and details of our Money Back Guarantee.

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Let us prove that you can sell your milk for three or four times as much as Calf Meal costs, and turn your calf loss into a profit. Order 100 pounds through your dealer or direct. Use it 30 days. If you are not satisfied that it does what we claim, return unused portion and your money will be refunded. It costs less to feed than any other standard meal or home mixture. Contains all nutriment necessary to keep the calf in good condition. Promotes healthy growth of meat and bone. A little added to poultry mash will make chicks grow quicker and hens lay better. Call on your dealer or write today for free sample.

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Quit buying posts in small lots at high lumber yard prices. We ship direct from woods. FREE Price List shows sizes, prices, number in car.

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The Dairy Show Makes Progress

BETTER CLASS OF STOCK AND MORE OF IT

C. H. HINMAN

THE exhibition of dairy cattle held in connection with the eleventh annual National Western Stock show is the third exhibit of this kind which has been held. An idea of the numerical progress may be gained from the fact that there were 134 dairy cattle exhibited this year, as compared with 113 last year and 86 in 1914.

This does not, however, fairly represent the progress made in this feature of the show, because the average quality has very greatly improved. As one exhibitor expressed it: "It takes better cattle every time to win."

In the Jersey exhibit, for example, both grand champions of last year's show were beaten in class, while the grand champion female of the 1914 show did not even get in the money. The exhibit was about equally divided between Jerseys and Holsteins, the former being represented by 58 animals and the latter by 51. Somewhat fewer Guernseys were shown than last year, but the average quality was better.

The exhibit of dairy Shorthorns was nearly double that of last year. This feature of the show has proven exceedingly interesting to the public and it is to be hoped that the numbers shown will increase rapidly.

The largest herd shown was that of the Hinman Silo Co. of Denver, who exhibited 22 Jerseys. The prize for the best individual of dairy cattle was won by H. D. Parker of Greeley, who exhibited sixteen Guernseys. This was the best fitted herd that has ever been shown here.

A feature of the exhibit was the buttertest cow owned by the Western Holstein Farm of Denver. This cow on official test last year produced 1,012 pounds of butterfat, the equivalent of over 1,200 pounds of butter. This record makes this cow champion butter cow west of the Mississippi river and places her sixth among the great butter producing cows of the world. This cow was given a specially decorated box stall upon which the facts relative to her record were displayed.

The importance of this exhibit to the dairy interests of the state may be inferred from the fact that the leading officially tested butter cows of the Holstein, Jersey and Guernsey breeds of the state were all on exhibit.

The awards were placed by John L. Smith of Spokane, Wash., who has been a leading breeder of dairy cattle for thirty-three years. At the National dairy show in Chicago three years ago the Hazelwood Holstein herd, of which he is proprietor, won nineteen firsts out of twenty-three for which they showed. Mr. Smith promises to show the Hazelwood herd in Denver next winter.

A very popular feature was the booth of the Denver Retail Milk Dealers' Association. Literature distributed from this booth and placards posted on the walls proclaimed in a striking way the food value of dairy products. Over 15,000 glasses of milk and buttermilk, the product of the cows on exhibition, were dispensed free from this booth during the week.

The special prizes offered by Swift & Co. for individual exhibits were awarded as follows:

Jerseys: Hinman Silo Co., Denver.
Holsteins: Donley & Simpson (Avoca Lodge Farm), Mount Morrison.
Guernseys: H. D. Parker (Auburn Farm), Greeley.

The awards follow:

Jersey Breeding Classes

Class 108—Aged Herd: First, The Hinman Silo Co., Denver, second; A. M. McClenahan, Greeley, Colo.

Class 109—Young Herd: First, The Hinman Silo Co.; second, A. M. McClenahan.

Class 110—Calf Herd: First, The Hinman Silo Co.; second, A. M. McClenahan.

Class 111—Get of Sire: First, A. M. McClenahan; second, O. S. Larson, Fort Morgan, Colo.

Class 112—Produce of Dam: First Hinman Silo Co.; second, A. M. McClenahan; third, O. S. Larson, Fort Morgan, Colo.

Class 104—Jersey Senior Yearling Heifer: First, A. M. McClenahan, Greeley, Colo.; second, The Hinman Silo Co., Denver; third, A. M. McClenahan.

Class 105—Jersey Junior Yearling Heifer: First, The Hinman Silo Co.; second, A. M. McClenahan; third, The Hinman Silo Co.

Class 106—Jersey Senior Heifer Calf: First, A. M. McClenahan; second, A. M. McClenahan; third, The Hinman Silo Co.

Class 107—Jersey Junior Heifer Calf: First, The Hinman Silo Co.; second, Colorado Agricultural college; third, A. B. McClenahan.

Senior Champion Jersey Cow: Hinman Silo company.

Junior Champion Jersey Heifer: Hinman Silo company.

Class 96—Jersey Bull, 3 Years Old or Over: First, The Hinman Silo Co., Denver; second, O. S. Larson, Fort Morgan, Colo.

Class 97—Jersey Bull, 2 Years Old and Under 3: First, A. M. McClenahan, Greeley, Colo.

Senior Champion Jersey Bull: A. M. McClenahan, Greeley, Colo.

Class 99—Jersey Junior Yearling Bull: First, not awarded; second, Colorado Agricultural college, Fort Collins.

Class 100—Jersey Senior Bull Calf: First, The Hinman Silo Co., Denver; second, The Hinman Silo Co.; third, A. M. McClenahan, Greeley, Colo.

Class 101—Jersey Junior Bull Calf: First, Mrs. Cora Horsley, Fort Collins, Colo.; second, O. S. Larson, Fort Morgan, Colo.; third, Hinman Silo Co., Denver.

Class 102—Jersey Cow, 3 Years Old and Over: First, Hinman Silo Co., Denver; second, A. M. McClenahan, Greeley; third, O. S. Larson, Fort Morgan, Colo.

Class 103—Jersey Cow, 2 Years Old and Under 3: First, Hinman Silo Co., Denver; second, A. M. McClenahan, Greeley, Colo.; third, Hinman Silo Co., Denver.

Holstein-Friesian

Senior Champion Bull: Windsor Farm Dairy, Denver.

Junior Champion Bull: Hall Brothers, Denver.

Grand Champion Bull: Windsor Farm Dairy.

Senior Champion Cow: Windsor Farm Dairy.

Junior Champion Heifer: Hall Brothers.

Grand Champion Cow: Hall Brothers.

Best Display Holstein-Friesians: Donley & Simpson, Mt. Morrison, Colo.

Best Display Jerseys: Hinman Silo Co.

Class 113—Holstein-Friesian Bull, 3 Years Old or Over: First, Windsor Farm Dairy, Denver; second, Donley & Simpson, Mt. Morrison, Colo.; third, Hall Brothers, Denver.

Class 115—Holstein-Friesian Bull, Senior Yearling: First, Donley & Simpson.

Class 119—Holstein-Friesian Cow, 3 Years Old or Over: First, Donley & Simpson; second, Donley & Simpson; third, Windsor Farm Dairy.

Class 116—Holstein-Friesian Junior Yearling Bull: First, Colorado Agricultural college, second, Hall Bros., Denver.

Class 117—Holstein-Friesian Senior Bull Calf: First, Donley & Simpson, Mt. Morrison, Colo.; second, Hall Bros.

Class 118—Holstein-Friesian Junior Bull Calf: First, Hall Bros.; second, Donley & Simpson; third, Hall Bros.

Class 124—Holstein-Friesian Junior Heifer Calf: First, Hall Bros., Denver; second, Donley & Simpson, Mt. Morrison, Colo.; third, Hall Bros.

Class 125—Holstein-Friesian Aged Herd: First, Donley & Simpson; second, Hall Bros.

Class 126—Holstein-Friesian Young Herd: First, Hall Bros.; second, Donley & Simpson.

Class 127—Holstein-Friesian Calf Herd: First, Hall Bros.; second, Donley & Simpson.

Class 128—Holstein-Friesian Get of Sire: First, Donley & Simpson; second, Hall Bros.; third, Hall Bros.

Class 129—Holstein-Friesian Produce of Dam: First, Hall Bros.; second, Donley & Simpson.

Class 120—Holstein-Friesian Cow, 2 Years Old and Under 3: First, Windsor Farm Dairy, Denver; second, Donley & Simpson, Mt. Morrison, Colo.; third, Hall Bros., Denver.

Class 121—Senior Yearling Heifer, Holstein-Friesian: First, Donley & Simpson; second, Hall Brothers; third, Colorado Agricultural College.

Class 122—Holstein-Friesian Junior Yearling Heifer: First Donley & Simpson; second, Hall Brothers; third, Colorado Agricultural College.

Class 123—Holstein-Friesian Senior Heifer Calf: First, Hall Brothers; second, Hall Brothers; third, Donley & Simpson.

Guernsey Cattle

Class 130—Bull, 3 years old or over: First, H. D. Parker, Greeley, Colo.; second, Dornes Guernsey Ranch, Fort Logan, Colo.

Class 131—Bull, 2 years old and under 3: First, H. D. Parker; second, Frank L. Douglas, Denver.

Class 132—Senior Yearling Bull: First, H. D. Parker.

Class 133—Junior Yearling Bull: First, Dornes Guernsey Ranch.

Class 134—Senior Bull Calf: First, Colorado Agricultural College; second, H. D. Parker, Greeley.

Class 136—Cows, 3 years old or over: First, H. D. Parker; second, H. D. Parker; third, H. D. Parker.

Class 137—Cow, 2 years old and under 3: First, H. D. Parker.

Class 138—Senior Yearling Heifer: First, H. D. Parker; second, Colorado Agricultural College.

Class 139—Junior Yearling Heifer: First, H. D. Parker.

Class 140—Senior Heifer Calf: First, H. D. Parker; second, H. D. Parker.

Class 141—Junior Heifer Calf: First, H. D. Parker; second, H. D. Parker.

Senior Champion Bull: H. D. Parker.

Junior Champion Bull: H. D. Parker.

Grand Champion Bull: H. D. Parker.

Senior Champion Cow: H. D. Parker.

Junior Champion Cow: H. D. Parker.

Grand Champion Cow: H. D. Parker.

Class 142—Aged Herd: First, H. D. Parker.

Class 143—Young Herd: First, H. D. Parker.

Class 144—Calf Herd: First, H. D. Parker.

Class 145—Get of Sire: First, H. D. Parker.

Class 146—Produce of Dam: First, H. D. Parker; second, Colorado Agricultural College.

Best Exhibit Guernsey Cattle: H. D. Parker.

Dairy Shorthorns

Class 39—Yearling Bull: First, Pine Valley D. & F. Co., Colorado Springs.

Class 40—Bull Calf: First, J. F. Welborn, Denver; second Pine Valley D. & F. Co.

Class 41—Aged Cow: First, J. F. Welborn; second, Pine Valley D. & F. Co.

Class 44—Heifer Calf: First, Pine Valley D. & F. Co.; second, J. F. Welborn.

Champion Bull: Pine Valley D. & F. Co.

Champion Cow: Pine Valley D. & F. Co.

SHARPLES
SUCTION-FEED PATENT
and what it means to you dairymen

The new SHARPLES patent, one of the broadest process patents ever obtained, covers any separator that will ***skim clean at all speeds.*** It covers the ***process*** of varying the feed in proportion to the centrifugal (separating) force. No one else can, for 17 years, make and sell such a separator.

You know of the tremendous losses caused by all fixed-feed separators because they are never turned full speed. More than 4,000 investigations ***proved*** that 19 out of 20 operators turn their separators ***below*** speed most of the time. Purdue Experiment Station Bulletin No. 116 ***proves*** that the loss from slow turning amounts to from 7 to 13 lbs. of butter per cow per year—or the appalling loss of 80,000,000 lbs. of butter yearly in America alone!

Skims Clean at *Any* Speed

So we realized that it was far from sufficient that a separator ***could*** skim clean when properly handled. It was vitally necessary that it ***would*** skim clean—even when improperly handled. That's SHARPLES, which sucks in just as much milk as the centrifugal force can perfectly handle—and ***no more.*** The result is ***clean*** skim at all speeds and ***unchanging*** thickness of cream.

All separator makers ***know*** of this tremendous loss and some ***admit*** it in their advertisements. They ***cannot*** stop the loss (because SHARPLES basic patent covers any separator that will skim clean at all speeds) so they try to ***warn*** against it by putting on a sight speed indicator (on which the operator's eyes must be glued every moment and his muscle must respond instantly to the indicator's ***prod*** for more speed)—or a bell indicator (which, like the fire alarm, gives notice of damage only ***after*** it is done). All such devices have proven ***failures,*** time after time, because few operators can stand being prodded or yelled at whenever the speed slackens.

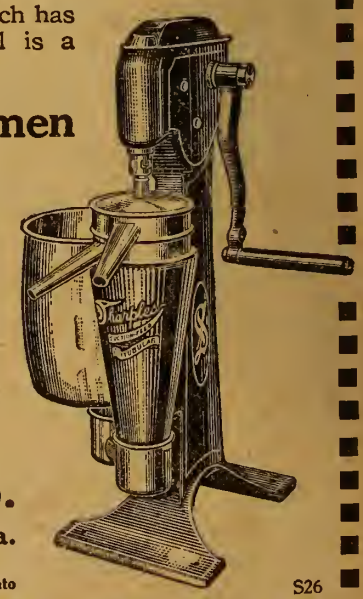
A bell ringing device is truly an acknowledgement of the vast ***superiority*** of SHARPLES which automatically ***prevents*** all losses from uneven turning instead of simply announcing them.

Simple Tubular Bowl—*No Discs*

Not a single piece is added to accomplish the wonderful "Suction-feed." And the SHARPLES was ***already*** by far the ***simplest*** and easiest to clean. We realized that it was not enough that a separator ***could*** be kept clean—it must be so simple that it ***would*** be kept clean. So the ***patented*** SHARPLES Tubular Bowl contains ***no discs*** or blades—it is just a plain, light, steel tube. No other separator can use it.

All other separators must contain discs or blades to skim at all. Their makers wrangle between them as to how many discs, and if curved or straight, and how the milk should be fed into them. They constantly change their designs without getting nearer the ***ideal.*** Some use more discs, many of them boast of using less. Such boasts plainly acknowledge that "the fewer discs the better."

The ***ideal*** is SHARPLES which has ***no discs at all.*** But this ideal is a SHARPLES patent.



Important to Dairymen

So all SHARPLES patents assure ***you,*** as a SHARPLES user, of ***larger*** profits and ***greater*** convenience than the other man gets. The knee-low supply tank, single ball bearing in oil, slow and easy crank speed, freedom from the tyranny of fixed speed, increasable capacity, easiest cleaning, automatic oiling without oil cups or oil holes—all these are ***your*** advantages ***exclusively,*** because they are exclusive SHARPLES features.

Send for catalog, which explains all this, addressing Dept. **30.**

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THIS all-steel churn is just what you have been waiting for. Make good butter without the hard work. Drawn steel barrel, heavily tinned inside—easy to clean—sanitary—cannot soak up moisture. Beautifully trimmed in red and blue. Ask your dealer or write us for Circular No. 96

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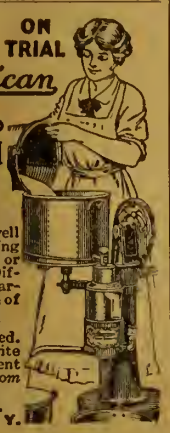

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Bowl a *sanitary marvel* easily cleaned. Whether dairy is large or small, write for free catalog and monthly payment plan. *Western orders filled from western points.*

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Have taken the field by storm. The highest quality separator possible to build. Simple, scientific design, only two shafts to the whole gearing. Bowl easily washed. Working parts run in oil spray. Easy to operate. A perfect skimmer. You can

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You can save even half because we build these perfect separators in our own factories with the highest skilled labor and lowest possible cost for fine materials and sell them direct from factory to farm at one small profit based on enormous volume. Guaranteed for ten years. Compare and test it beside ANY SEPARATOR BUILT. Ask for 1917 free catalog.

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THE BARTELDES SEED COMPANY
2232 Sixteenth Street, Denver, Colorado.

Dual Purpose Cows

In your issue of January 15th, 1917, John Hays of Pilot, Wyo., says: "In my opinion there is no such thing as a dual purpose cow." I give herein a few facts and statements gathered from reliable sources that ought to start him thinking differently.

Contrary to Mr. Hays' belief, the offspring from a dual purpose cow is very likely to be a better producer than her mother. Let me give you some examples: Mamie Clay 2nd of the Glenside herd of Milking Shorthorns gave 13,232 pounds of milk in one milking period; her daughter, Mamie's Minnie, made a record of 15,000 pounds. Margretta Clay of the same herd gave 10,043 pounds, and her granddaughter, Rose of Glenside, has a record of 18,075 pounds. Bell Clare was one dual purpose cow winning over the Jerseys at the Vermont State fair of 1911.

Mr. Hays makes a mistake when he asks this question: "If one breeds for butter, how long would cattle remain of the beef type?" He then says, "This is easily proven from the fact that our dairy breeds, such as Holstein, Guernsey, Jersey and Ayrshire are far from beef animals." He compares the dual purpose animal with the special dairy breeds. The dual purpose animal is neither a special dairy animal nor a beef type, but a mingling of both—A DUAL PURPOSE COW.

An example of a Red Poll (dual purpose) will give Mr. Hays a different view in regard to the beef qualities. A steer exhibited by H. P. Green at the fat stock show of England in 1895 was one of twins, and his dam, Gleanor V 9th had a milk record of 14,189 pounds made the previous year. At less than 1½ years old this steer weighed 1,238 pounds; at 2½ years he weighed 1,735 pounds. Another of Mr. Green's steers dressed out 73.7 per cent. The English are great meat-eaters, and are very particular to get the choicest cuts. The milking Shorthorns are their main dairy animals and constitute most of their beef.

Yes, a special dairy animal's carcass is easily told from a beef animal's carcass, but I do not believe there is a person that can pick out the dual purpose carcass from the beef breed's carcass.

A definition of the term "dual purpose" may here be in line. The term is used to describe those breeds of cattle which are bred for both milk and beef production. Much of the discussion regarding the question of dual purpose as compared with the special purpose cattle comes from erroneous ideas of what constitutes a dual purpose animal. A dual purpose animal is not supposed to compete with either the special dairy cow or the beef type, but to combine the two to a certain extent. All beef cows that show a tendency to give quite a quantity of milk are not dual purpose, neither are the special dairy cows that put on fat easily, dual purpose. The breeds that will produce a medium quantity of milk for a dairy cow and that will sell at a fair price for a beef animal when fattened and will transmit their milking and beef qualities to their offspring are, to my notion, dual purpose.

From what authority I can get, a dual purpose cow should be expected to produce about 200 pounds of butter fat a year against about 300 for a good specimen of the dairy breed, and her calves should make fair beef animals. Here are some that recognize the dual purpose cow. The Columbian Exposition of 1893 entered the Polled Durhams as dual purpose cattle. Kitty Clay 4th, a Pennsylvania animal, was one of the cows chosen to represent the Shorthorns at the great dairy test at Chicago in 1893, and was the champion cow of her breed in the butter test. In the thirty-day trial her yield of milk was 1,593 pounds, which made 62¼ pounds of butter. Two years later she gave almost 5,000 pounds of milk in three months, her best days being 65 pounds. At a fair ground trial, when only two years old, she gave over 28 pounds of milk in one day, which made 1⅓ pounds of butter. She is a member of one of the best milking families of Shorthorns in America, and her "dual purpose" has been shown in one of her sons, which, after satisfactory service as a dairy sire, was killed when five years old; his live weight was 2,080 pounds, and the dressed weight of his four quarters 1,456 pounds.

Alvin H. Sanders, in his book on Shorthorn cattle, says: "The Shorthorn is distinctively and emphatically a dual purpose breed." The milking qualities of the English Shorthorn are shown in a remarkable way by the results of the milk and butter tests made at the London Dairy Show. In the eleven years from 1894 to 1904, inclusive, first place in both milk production and fat production was won in every case by a Shorthorn competing against Jerseys, Guernseys, Ayrshires, Red Polls, and Crosses. Two hundred and thirty-six pedigreed Shorthorns in these eleven tests averaged 48 pounds milk and 1.82 pounds fat per day.

I hope the foregoing will give Mr. Hays a different view in regard to the dual purpose cow. I also hope that others will be benefited by this brief account.

LELAND A. WOOTTON,
Heber City, Utah.

Can't Sell the Property

Western Farm Life Service Bureau:

About one year ago I exchanged oil, gasoline and some repairs with a fellow neighbor for some work, and while working for me the fellow verbally bought an old motorcycle of me, with the intention of paying for it with work, but before he had it entirely paid for we got into a wrangle, and so he quit, and having the machine only partly paid for. I therefore would not let same go and he, in return, would not pay the balance still due. Until now we have not come to a settlement. I have offered the machine to him for less than the first agreement, and yet he will not take it. What can I do about it? I have a chance to sell it to another party, but don't know whether I have the right to do so or not, unless I pay him what I have received on same, and that I am bound not to do.—A. A. F., Logan Co., Colo.

You have the right to collect from your neighbor the balance due for the motorcycle. If he has partly paid for it, you have no right to sell it to anyone else until you repay him the amount that he has paid upon it, unless there was an agreement between you that if he did not pay all of the purchase price that the title to the motorcycle should remain in you.

A verbal contract is just as good as a written one with respect to the matters involved in your question. The only advantage of a written contract over a verbal one is that usually it is easier to make proof of a written contract than of a verbal one.—Peters & Barker, Attorneys, Denver, Colo.

Rights of Widow

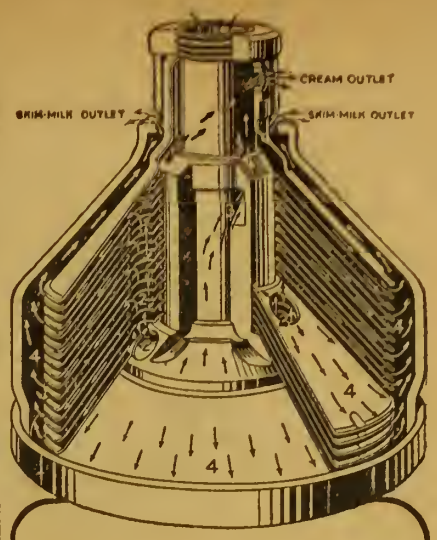
Western Farm Life Service Bureau:

A dies and leaves B, a widow, with five heirs. A wills B 160 acres of land. B has it probated in court. C marries B. What interest has C then in B's land, and what interest does B have in C's personal property, if any? This is in the state of Oregon.—C. M. W., Idaho.

In answering this question we assume that when you say that A left a widow and five heirs you mean that he left a widow and five children. We would say that C has no interest in B's land. However, in the event of the death of B, C would be entitled to use during his natural life of one-half of B's land. Neither dower nor courtesy has been abolished in Oregon. Upon the death of a person the property descends to the children in equal shares. If no children, then to the husband or wife.

B has no interest in C's personal property; that is, he may mortgage, sell or dispose of the same during his lifetime without the consent of B. In the event of the death of C, his personal property would descend to his children. His real estate would also descend to his children, subject to the right of dower of the widow, and as to the real estate, she would be entitled to the use of one-half of it during her natural life. Should C die without children, then his real estate would descend to B.—Peters & Barker, Attorneys, Denver, Colo.

California, once an important wheat state and noted for large bonanza wheat farms, is no longer classed as a wheat-producing state. Twenty years ago it produced 45,000,000 bushels of wheat, shipping much of it to Europe. This year its production will probably be not much more than 4,000,000 bushels, and it will need to ship in from other states 10,000,000 bushels or more to meet its own food requirements.



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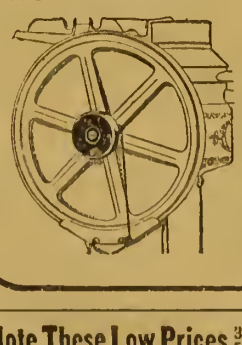

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The Farm Home

Mrs. H. T. French

GOOD things in bountiful measure for the rural women of Colorado, in better methods of household management and home improvement, are promised in steps taken at the recent sessions of the Colorado Farmers' and Farm Women's Congress. An exceptionally strong and practical program, strikingly illustrated with exhibits and demonstrations, was provided this year at the Agricultural College and a lively interest was taken by the women in attendance.

When the sessions were over a meeting was held to discuss a permanent organization. It was decided to affiliate more closely with the Farmers' Congress and to ask the delegates to extend the scope of the Congress to include the problems of the home. Under this new plan, and with the success of the sessions this year as an inspiration, greatly increased interest and attendance are expected next year. The sessions this year were held in Guggenheim Hall of Domestic and Household Arts.

After a few appropriate and kindly words of welcome by Miss Allison, Professor of Home Economics, she gave amost helpful and concise talk on extension work for the women of Colorado—its organi_ation and procedure. Miss Allison made all present feel that it was their conference and that the worth and power of the conference would grow in proportion to the earnestness with which the farm women grasp the opportunity for interchange of ideas and real co-operation.

Miss Allison then introduced Miss Haynes, Extension Specialist in Home Economics, who gave in her usual straightforward way a resume of the past year's work in the field, her work having been devoted to kitchen improvements, such as hot and cold water, ventilation and light. Some attention, Miss Haynes said, had been given to food, clothing, serving and home furnishing, the slogan being, "Things for comfort and convenience first—show last," the idea of home improvement through the kitchen, placing particular stress on the three G's, viz., greenbacks, gumption and grit.

Kitchen Corner, Home Economics Department, Colorado Agricultural College.

The opportunity for a face-to-face conference with Miss Haynes led to a most interesting and helpful discussion and the women from the various clubs and localities were quick to see the value of coming together, and a growing interest in what the next few days would bring was evident.

An Inspiring Talk

One of the most inspiring talks of the week was the one that followed by Mrs. C. A. Lory on "Co-operating Agencies in the Extension of Home Improvement." Mrs. Lory made the value of co-operation very clear indeed, giving briefly the part that existing women's clubs and other organizations could take in forwarding this rural work for home betterment. "The Organization of the Country Club and Its Relation to the Extension Service" was discussed by the delegates present; and as the exact relation of the many organizations interested in the problems of home betterment the breadth and variety of their functions relating to the extension work, as well as the most effective forms for their organization, are as yet largely undetermined, the subject was left open for further discussion.

Tuesday morning was a most instructive and practical one, and the laboratory of the domestic science department of the college was the place of operation. Prof. Charles I. Bray, assisted by Miss Haynes, gave talks and demonstrations on the curing of meats on the farm and the cooking of these meats. Some very valuable literature was distributed, and this with notes and lasting impressions were eagerly taken away.

"The House, Its Decoration and Furnishing," was the interesting subject introduced by Miss Nellie M. Killgore, and caught the attention of a splendid audience in the afternoon of Tuesday.

Miss Magdalene Hahn gave a much appreciated talk, with illustrations, on "The Sanitary Care of the House." Miss Allison gave many workable plans for better household management and most practical were the suggestions as to how accounts may be kept and the business methods of the home improved and made a vital part of the machinery of a well regulated household.

"Home and Community Pleasures" was the big topic for Wednesday morning and from a great storehouse of experience Dean S. Arthur Johnson of the Agricultural College, gave his ideas of "The Family Reading Circle," making everyone present feel that she would not miss another opportunity to enjoy the companionship of good books and stories in poetry and prose, with the children around the fireside and under the evening lamp. No less fascinating and convincing was the talk by Prof. E. B. House, who handled the subject of "Recreational Interests Other Than Songs and Books" in such a sensible and enthusiastic manner as to make everyone want to know more of the joy of sharing our pleasures and other interests with our children.

"The Rural School as a Social Center" was the subject of a discussion led by C. G. Sargent, who never fails to interest his hearers in this much-talked-of ideal—one that everyone interested in the rural community hopes to realize in the near future.

"The Graphophone and the Recreational Interests of the Home" was demonstrated in a pleasing and convincing manner by Mr. Matthew Auld.

Wednesday afternoon was one of general interest, the subject, "Statewide Problems" receiving much consideration.

Under "Labor Saving a Factor in Saving the Home," Miss Haynes gave some good, practical suggestions, many of them having been gathered from the women on their own farms; and thus the women were again led to see the value of working out their own problems and passing the results of their discovery and experiences on to their neighbors. Miss Haynes said: "A home is a center of better living," and advised that less emphasis should be placed on food until better conditions under which women work are given attention. She said that a woman who is a real partner should have her share of usable, up-to-date, worth-while utensils. Two things are essential to happy homes, viz., better equipped kitchens and changed attitude of women toward home work.

A subject of unusual interest to many was well presented by Mr. H. H. Simpson, who told of the county fair as a community aid toward establishing standards in the home. Mr. Simpson's first-hand experience was very valuable and furnished food for future thought and use.

Women Discuss Beekeeping

The best attended session of the week was on Thursday morning when Mrs. F. F. Tucker of Broomfield spoke on bee culture, and Mrs. C. M. Stitt of Fort Morgan told of her successes at poultry raising, both "Home Industries as a Source of Income of the

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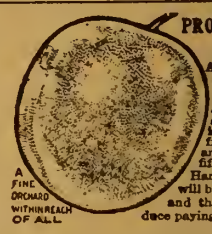

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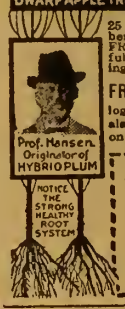

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arm Women," that being the main opic under discussion that day.

in the afternoon Mrs. W. W. Taylor f Fort Collins gave a paper on "The arden as a Source of Income," and his, as well as the preceding talks, arted much helpful interchange of ions and questions were asked and nswered until time would permit of o further discussion. A great amount f constructive information was taken ome from this meeting, and as a roult it is safe to predict that more me will be given to this business de of home-making one year from ow.

Following these live topics came the ery comprehensive and able talk by rof. J. J. Gardner on "The Storage f Vegetables." By drawing on the lackboard and a fine classification of egetables Mr. Gardner made it seem most profitable and possible thing keep at least TWENTY different egetables fresh for winter use, by ropor means of storage. Most people o not receive full benefit from the arden because they do not plan for inter supply.

The "Problem of Food Preservation" as continued Friday morning and a emonstration on "The Preservation f Fruits and Vegetables" was given y Miss Evelyn G. Halliday in the domestic science kitchen. Many recipes ere given out and the difficulties of anning vegetables made to disappear n the minds of many who went home esolved to reduce the high cost of ving another season, and to enjoy the ruits of their own labors.

Another Absorbing Topic

Seemingly that the best might be eft to the last, the ever-interesting nd absorbing subject, "The Child," as the subject for Friday afternoon. Miss Carpenter, having charge of instruction in Domestic Arts, discussed "The Clothing of the Child," demonstrating her talk in a pleasing manner nd actually showing material and designs suitable for the child in all the ifferent sizes and for all occasions, ncouraging the busy mother who does er own sewing, that the time and noney spent may not be out of pro-

Continued on Page 19

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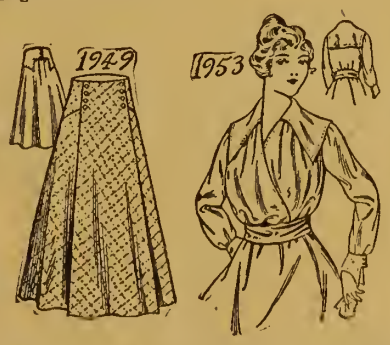
1948—Girl's Overblouse Dress. Cut in sizes 6, 8, 10 and 12 years. Requires 1¾ yards, 7-inch material for guimpe and 3⅜ yards material for the dress for 8-year size. This style will make an ideal school dress. The guimpe may be of lawn, cambric, cashmere, flannel or challie, and the overdress of plaid or checked woolen, of serge, gingham or galatea. The closing of the overdress is effected on the shoulders, but if desired, it may be closed at the center back or front.

1944—Simple, Becoming Model. Cut in sizes 4, 6 and 8 years. Requires 2¾ yards, 44-inch material for 8-year size. Galatea, gingham, percale, serge, gabardine, velvet, corduroy and taffeta, linen, linene and lawn are nice for this design. It is easy to develop, comfortable and in good style. The belt is held in place by slashes made through the underfolds of the plaits.

1947—Simple Morning Dress. Cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Requires 6⅞ yards 36-inch material for 36-inch size. This style shows the ever-popular "big" pockets and has a smart collar in sailor style. The sleeve may be finished in wrist or elbow length. This model is good for serge, gabardine, flannelette, gingham, percale, linene and linen.

1715—Practical, Serviceable Apron. Cut in sizes, Small, Medium and Large. Requires 6¾ yards 36-inch material for medium size, with sleeves. Percale, brilliantine, mohair, sateen, gingham, seersucker, lawn or cambric may be used for this design. It may be finished without sleeves and with the yoke cut in square outline at the neck. It may have loose sleeves in short length, or be made with sleeves in wrist length, thus affording a complete covering for the dress that may be worn beneath it. This style is good for housekeepers, or for studio wear.

1949—An Attractive and Stylish Model. Cut in sizes 22, 24, 26, 28, 30, 32, and 34 inches waist measure. Requires 4¾ yards 36-inch material for 24-inch size. The skirt measures about 3⅛ yards at the foot. This smart style is fine for the new materials of this season. It is nice for satin, velvet, serge and gabardine, also for broadcloth, mixed and checked suiting. The front gore is finished with deep plaits, and the back has gathered fullness.



1953—Dainty Waist Model. Cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Requires 2¾ yards 44-inch material for 36-inch size. Georgette crepe in the new shade of blue would be nice for this, or a pretty shade of gray or brown flannel. It is also nice for lawn, linen, linene, madras, batiste, taffeta, satin and serge. The right front overlaps the left in surplice effect. The collar is wide over the shoulders and has smart lines. The sleeve is comfortable and finished with a pretty cuff.

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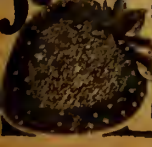

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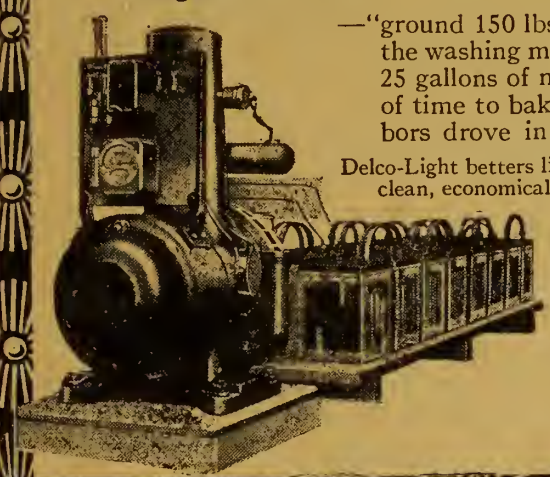

—"ground 150 lbs. of sausage meat—churned 90 lbs. of cream—turned the washing machine and wringer for large family wash—separated 25 gallons of milk. And after all of this work, my wife had plenty of time to bake bread. During the evening, some of the neighbors drove in and we had a pleasant time under Delco-Light."

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Idaho in the Show Ring

E. J. Iddings

THE University of Idaho has less than 100 students in the four-year courses in agriculture and has an exceedingly limited appropriation for animal husbandry work. In stock judging contests and in the live-stock showing, however, figures show that the Idaho school leads the district west of the Rocky mountains.

In the past five years there have been 16 different intercollegiate stock-judging contests in the terrritory west of the Rockies. The university, thru its department of animal husbandry, has been a participant in all but one, a dairy judging contest held at Portland in 1913. In the 15 intercollegiate contests where she has had teams or individual students entered, the university has met at various times the following: The University of California, the Utah Agricultural college, the Washington State college, the Oregon Agricultural college, and the Montana Agricultural college. In this kind of company the Gem state's university has won 9 firsts out of a possible 15. In most of the contests from three to five teams were competing.

The Idaho team this year has won the western stock judging championship, having won two out of the three contests held in the Western Pacific states. The three contests mentioned were held at North Yakima, Wash., Lewiston, Idaho, and Portland, Ore. The competing teams were the agricultural college teams of Washington and Oregon.

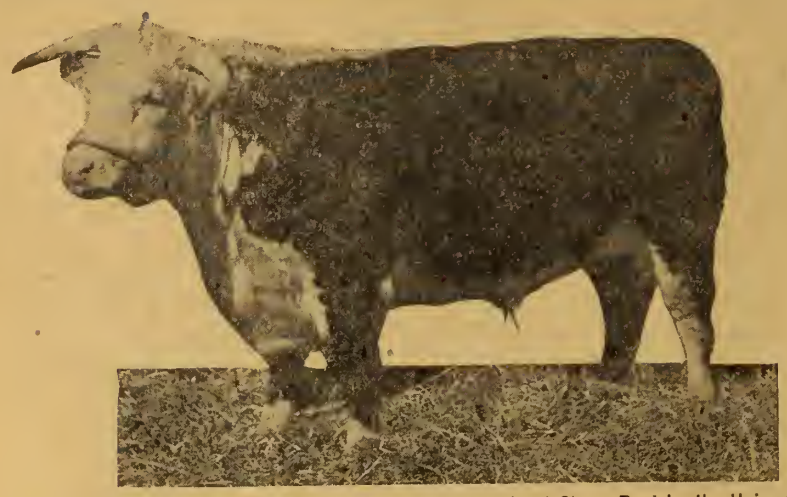
In the show ring the university record has been even more conclusive. Of the eight grand champion steers that were awarded at Lewiston and Portland open to agricultural college competition, Idaho has won seven against all college and other competitors. Of the five grand champion steer awards made at Portland ,Idaho has won five in succession. Of the eight grand champion wether awards at Lewiston and Portland open to college competition, Idaho has won six and has never fallen below reserve to grand champion. The competitors have been the agricultural colleges of Washington and Oregon, various breeders of the northwest, some of whom carry large and highly fitted show herds; and twice in competition with the University of California that recently made so remarkable a record at the International.

At the Pacific International Live-stock exposition at Portland this year Idaho won the purple award of grand champion steer with a two-year-old pure bred Hereford, Bonnie Lad. Bonnie Lad was of the university's own breeding and sold at 45 cents per pound, or $747. Idaho's five grand champion steers at Portland, in the years 1912, 1913, 1914, 1915 and 1916, have sold at auction at an average price of 55 4-5 cents per pound. In addition to Bonnie Lad, the university sold at Portland this year three other steers at respectively 18 cents, 22 cents and 25 cents per pound, making four show steers sold by one institution at an average price of 27½ cents per pound.

It is doubtful if any other agricultural institution in American can show a record such as this along livestock lines, a record continuous and consistent performance in the way of preeminence in student judging and fitting fat steers and wethers for show-yard winning.

The Idaho grand champion steer of last year, the pure bred Shorthorn, Benefactor, won at Portland with the strong herd of the University of California as the chief contender. One of the steers that had to take less than the highest honors at that time was California Jock, recently reserve champion at Chicago. Benefactor this year as a two-year-old was good enough to win championship honors at the Iowa State Fair at Des Moines.

The University of Idaho has confined her attention in fitting for show almost entirely to fat steers and fat wethers. The university herd of 1916 of 12 steers and 15 wethers was especially strong. These animals were entered at Lewiston and Portland for 54 awards. They won 3 grand championships, 2 reserve to grand champion, 5 championships, 14 first, 13 seconds, 8 thirds and 1 fourth, or a total of 46 of the 54 awards for which they entered.



Bonnie Lad, Grand Champion Steer of the Pacific International Show, Bred by the University of Idaho.

Grades and Cross-bred Steers

Continued from Page 5.

Champion Grade Shorthorn Steer: R. G. Maxwell & Sons, Fort Collins, Colo.

Class 171—Grade or Cross-bred Yearling Steer: First, Mrs. D. D. Casement (Hereford), Manhattan, Kan.; second, Kansas State Agricultural college (Hereford), Manhattan, Kan.; third, Kansas State Agricultural college (Hereford), Manhattan, Kan.

Class 172—Grade or Cross-bred Calf Steer: First, R. G. Maxwell & Sons (Shorthorn), Fort Collins, Colo.; second, Nebraska State college (Hereford), Lincoln, Neb.; third, Nebraska State college (Hereford), Lincoln, Neb.

Class 173—Grade or Cross-bred Steer Herd: First, Kansas State Agricultural college, Manhattan, Kan.; second, Nebraska State college, Lincoln, Neb.

Class 175—Grade Shorthorn Yearling Steer: First, A. J. Campion, Denver, Colo.; second, R. G. Maxwell & Sons, Fort Collins, Colo.

Class 176—Grade Shorthorn Calf Steer: First: R. G. Maxwell & Sons, Fort Collins, Colo.; second, Nebraska State college, Lincoln, Neb.; third, Nebraska State college, Lincoln, Neb.

Class 179—Pure-bred, Grade or Cross-bred Hereford Yearling Steer: First, Mrs. D. D. Casement, Manhattan, Kan.; second, Colorado Agricultural college, Fort Collins, Colo.; third, Kansas State Agricultural College, Manhattan, Kan.

Class 180—Pure-bred, Grade or Cross-bred Hereford Calf Steer: First, T. F. DeWitt, Parshall, Colo.; second, Cyrus A. Tow, Norway, Iowa; third, Kansas State Agricultural college, Manhattan, Kan.

Class 181—Pure-bred, Grade or Cross-bred Hereford Steer Herd: First, Kansas State Agricultural college, Manhattan, Kan.; second, Nebraska State college, Lincoln, Neb.; third, Kansas State Agricultural college, Manhattan, Kan.

Lord Ogilvy Trophy to herdsman fitting champion grade or cross-bred steer: James Ingram, Kansas State Agricultural college, Manhattan, Kan.

SWINE AWARDS

Poland-China

Class 17—Boar; 2 years old or over: First, Eleck Baldwin, Dickens, Neb.; second, Colorado Agricultural College; third, A. M. McCapes, Boulder, Colo.

Class 18—Boar, 18 months and under 24: First, J. H. Hamilton & Sons, Guide Rock, Neb.; second, Cbarles R. Broad. Golden, Colo.; third, Jay M. Probst, Loveland, Colo.

Class 20—Boar, 6 months and under 2 years: First, Colorado Agricultural College; second, Charles R. Broad; third, A. D. McGillvray, Boulder, Colo.

Class 21—Boar, under 6 months: First, R. G. Maxwell & Sons, Fort Collins, Colo.; second, A. D. McGillvray; third, A. D. McGillvray.

Class 22—Sow, 2 years old or over: First, J. H. Hamilton & Sons; second, Eleck Baldwin, Dickens, Neb.; third, J. H. Hamilton & Sons.

Class 23—Sow, 18 months and under 24: First, Colorado Agricultural College; second, Colorado Agricultural College; third, Eleck Baldwin.

Class 24—Sow, 12 months and under 18: First, J. H. Hamilton & Sons; second, Eleck Baldwin; third, J. H. Hamilton & Sons.

Class 25—Sow, 6 months and under 12: First, Colorado Agricultural College; second, Eleck Baldwin; third, Eleck Baldwin.

Class 26—Sow, under 6 months: First, A. D. McGillvray; second, A. D. McGillvray; third, Eleck Baldwin.

Class 27—Aged Herd: First, J. H. Hamilton & Sons; second, Colorado Agricultural College: third, Eleck Baldwin.

Class 28—Aged Herd Bred by Exhibitor: First, Eleck Baldwin.

Class 29—Young Herd: First, Colorado Agricultural College; second, Eleck Baldwin; third, A. D. McGillvray.

Class 30—Young Herd Bred by Exhibitor: First, Colorado Agricultural College; second, Eleck Baldwin; third, A. D. McGillvray.

Class 31—Get of Sire: First, Colorado Agricultural College; second, Eleck Baldwin; third, J. H. Hamilton & Sons.

Class 32—Produce of Dam: First, Eleck Baldwin; second, A. D. McGillvray; third, J. H. Hamilton & Sons.

Senior Champion Boar: Eleck Baldwin.

Junior Champion Boar: Colorado Agricultural College.

Grand Champion Boar: Eleck Baldwin.

Senior Champion Sow: J. H. Hamilton & Sons.

Junior Champion Sow: Colorado Agricultural College.

Grand Champion Sow: J. H. Hamilton & Sons.

Poland-China Barrows

Class 62—Barrow weighing 275 lbs. and under 350 lbs.: First, R. G. Maxwell & Sons, Fort Collins, Colo.; second, Nebraska Agricultural College, Lincoln, Neb.; third, R. G. Maxwell & Sons.

Class 63—Barrow weighing 225 lbs. and under 275 lbs.: First, Nebraska University, Lincoln, Neb.: second, Nebraska University, Lincoln, Neb.; third, R. G. Maxwell & Sons, Fort Collins, Colo.

Class 64—Barrow weighing 190 lbs. and under 225 lbs.: First, Nebraska University; second, Nebraska University; third, J. H. Hamilton & Sons, Guide Rock, Neb.

Champion Barrow: R. G. Maxwell & Sons.

Duroc Jersey Barrows

Class 65—Barrow weighing 275 lbs. and under 350 lbs.: First, Nebraska University; second, University of Nebraska Sub-station, North Platte, Neb.; third, O. J. Brownfield, Cozad, Neb.

Class 66—Barrow weighing 225 lbs. and under 275 lbs.: First, O. J. Brownfield; second, University of Nebraska Sub-station.

Class 67—Barrow weighing 190 lbs. and under 225 lbs: First, University of Nebraska Sub-station; second University of Nebraska Sub-station.

Champion Barrow: University of Nebraska.

Class 68—Grade or cross-bred barrow weighing 275 lbs. and under 350 lbs.: First, Elwood Couchman, Lyons, Neb.; second, Elwood Couchman, Lyons, Neb.; third, R. G. Maxwell & Sons, Fort Collins, Colo.

Class 69—Grade or cross-bred barrow weighing 225 lbs. and under 275 lbs.: First, Elwood Couchman; second, R. G. Maxwell & Sons; third, R. G. Maxwell & Sons.

Class 70—Grade or cross-bred barrow weighing 190 lbs. and under 225 lbs.: First, Elwood Couchman; second, Elwood Couchman; third, Clarence Swayze, Denver.

Champion grade or cross-bred barrow: Elwood Couchman.

Grand champion barrow: Elwood Couchman.

Duroc Jersey

Class 33—Boar 2 years old or over: First, Caldwell Martin Littleton, Colo.: second, C. F. Burke, Rocky Ford, Colo.; third, F. L. Crow, Hutchinson, Kan.

Class 34—Boar 18 months and under 24: First, F. L. Crow; second, Colorado Agricultural College; third, J. B. Benedict, Littleton, Colo.

Class 35—Boar 12 months and under 18: First, F. L. Crow; second, F. L. Crow; third, F. L. Crow.

Class 36—Boar 6 months and under 12: First, Colorado Agricultural College; second, Colorado Agricultural College; third, F. L. Crow.

Class 37—Boar under 6 months: First, J. W. Brauer, Colorado Springs; second, J. B. Benedict; third, J.B. Benedict.

Class 38—Sow 2 years old or over: First, F. L. Crow; second, Colorado Agricultural College; third, Caldwell Martin.

Class 39—Sow 18 months and under 24: First, Colorado Agricultural College; second, F. L. Crow; third, Caldwell Martin.

Class 40—Sow 12 months and under 18: First, C. F. Burke; second, F. L. Crow; third, F. L. Crow.

Class 41—Sow 6 months and under 12: First, Caldwell Martin; second, Colorado Agricultural College; third J. B. Benedict.

Class 42—Sow under 6 months: First, J. W. Brauer; second, J. W. Brauer; third, J. W. Brauer.

Class 43—Aged Herd: First, Caldwell Martin; second, F. L. Crow; third, F. L. Crow.

Class 44—Aged Herd Bred by Exhibitor: First,

Continued on Page 20

Denver The Live Stock Market

Denver is the Highest Market **Most of the Time** and the Best Market **All the Time** for Western Cattle and Sheep.

Time and again cattle have sold on the Denver market for higher prices than the same cattle would bring same days at the Missouri River.

The Hog and Sheep Departments are breaking all records.

Conditions at Eastern markets emphasize advantages Denver offers at present for all classes of live stock.

Why don't you market your cattle and sheep at Denver, where they will bring you greatest net returns?

DITCHES!

Make the NEW and **Clean the OLD** with the MARTIN Ditcher, Dyker and Grader. Makes or cleans irrigation or drain ditches up to 4 feet deep—any width. Makes two to three foot dyke or levee; grades roads. Works in sand, rocks, gumbo or clay—wet or dry—on side hills or level ground.

Reversible, Adjustable, No Wheels, Cogs or levers. No breakable parts. All steel. 2, 4 and 6 horse sizes. Guaranteed to do more work than 50 men with shovels. Cost low, upkeep nothing. Over 10,000 satisfied customers everywhere. Write TODAY for catalog, full particulars and introductory offer on new 1917 models.

The Martin WAY

ONE OF A THOUSAND

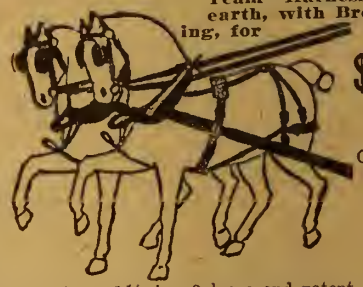
"We have made several miles of ditch and some side hill road with our MARTIN. It has paid for itself at least 3 times during this season." A. L. CAMPBELL, Lysite, Wyo.

10 DAYS TRIAL

OWENSBORO DITCHER & GRADER CO., Inc.
567 Evans Block DENVER, COLORADO

ALFALFA SEED FOR SPRING SOWING. From locality where it grows best and most abundantly. Our seed won the Gold Medal at the St. Louis World's Fair, in competition with the world. We also handle White and Yellow Sweet Clover. Write us for prices and free samples. Address McBETH SEED HOUSE, 320 Main, Garden City, Kan.

THE BEST $45.00 strictly all oak tanned Western Double Team Harness on earth, with Breeching, for **$36**



Catalog for the asking

Hame tugs, 1½ in., 3 loops and patent buckle. Traces, 2½ ins. solid single ply, with cockeyes.

The Fred Mueller Saddle & Harness Co.
1413-15-17-19 Larimer St., Denver, Colo.

FARMERS HANDY WAGON

Low steel wheels, wide tires, make loading and handling easier. We furnish Steel Wheels to fit any axle, to carry any load. Plain or grooved tire. Catalogue sent free.

EMPIRE MFG.CO., BOX 397 Quincy, Ill.

FREE BUILDING MATERIAL CATALOG

You save from $100 to $1,000—depending upon size of building—through buying our famous *big tree lumber* right from the woods. 56-page Building Material Catalog FREE. Write today. Send your *carpenter's list* for our money-saving estimate.

Hewitt-Lea-Funck Co., 453 Funck St., Sumner, Wash.

Profitable Farm Poultry

W. E. VAPLON

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries Poultry Department, Western Farm Life, Denver, Colorado.

Hens are laying and egg prices are tumbling, but its no use crying over spilled milk. The high prices are gone, for a while at least, and few of us profited by them. The worst of the whole thing is, that few of us have learned the why of it and will probably go through the same experience next winter.

We heard a few days ago of a man near Denver who made a mint of money a year ago, his hens laying better than 50 per cent nearly all winter, but who is paying out over $3.00 per day this winter for feed and nothing coming in. He has the idea that feed or weather or something else is the cause, but nine-tenths of his trouble is the same as ours, HATCHING TIME.

We who depend upon the hens to do the hatching are going to be worse off than ever for those 60c eggs next winter, unless our neighbors are foolish enough to sell us their early broody hens. Late laying means late broodiness, just as surely as late hatching means late laying next winter. Our hens coming into the lay so late, means that few will be ready to set in February, and those of us who keep the larger breeds want some chicks hatched early in March. Luckily the incubator is here to help us out. Our own pullets went back on us this past winter; few were early hatched, but worse than that, we were compelled to keep them yarded until they were five months old, in quarters too small for the number. They are doing well now, however, but we look for very few broody hens until the latter part of March, so we shall start the first hatch going February 15th in an incubator. The salvation of the egg farmer who wants winter eggs is the incubator and brooder.

Better get busy brightening up the old machine; if you have none, don't let a day pass without ordering one and set it going as soon as you can. If you want to improve your flock with better blood, buy a machine full of eggs of a neighbor who has the right kind of stock, and better yet, get a few good roosters for the flock, and breed to a definite end.

We have as yet found no rules for running an incubator so good as those that come with the machine. Follow the maker's instructions religiously, at least until you have yourself proved a better way. A living room, where the machine is not subjected to extreme degrees of temperature, is usually a better location for the incubator than the cellar of the average farm house.

The brooder is as essential to successful work with chicks as an incubator. Raising chicks by hand, in boxes behind and under the stove, is no fun, and is not economical to say the least. A brooder will pay for itself in one season in time saved, chicks saved and in better chicks raised. There should be no lack of heat at any time in the chick's life. Chilling probably is to blame for more mortality than all other causes combined. We are firmly convinced that plenty of warmth and sour milk all the time are better medicine for baby chicks than all the dope and instructions ever invented.

Hatching and caring for early chicks is rather more expensive and involves more work than the average farmer is willing to give. Eggs are higher in February than in April; incubators and brooders, and a place to keep a brood-or, mean an outlay of money that look like sheer waste to many farmers, but the penalty for not going at this thing in a right way is not only an empty egg basket next winter, but no early broilers when the price is up. The poultry business is like any other, it pays dividends only on capital and brains; and unless these are invested in the business the returns will be negligible.

Incubators

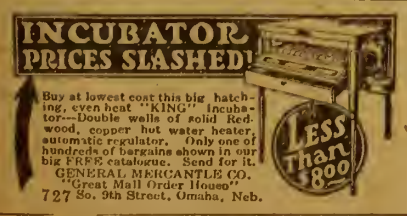
In buying an incubator, limit the size of the machine you choose to the size of your flock and to the number of chicks you expect to raise. To be obliged to save up eggs over a long period of time to fill a large machine is a sure way to get a poor hatch and more or less weaklings. If you have a small flock buy a small machine that can be filled with eggs not over a week or ten days old; even in case of having a large flock to supply the eggs, it is usually better to have two small machines than one large one. Even if chicks come a week or ten days apart, they can all be placed in the same brooder, providing the brooder is large enough. We used to hatch all our chicks by hens and put all into brooders, sometimes having four or five sizes in the same brooder at the same time, with good results.

Hatching gets to be somewhat of a chore if continued through a long season. With incubators the season's chicks can be hatched in two or three operations. When using hens it is much more satisfactory to set a number of hens at one time than to set them singly. The sooner hatching is out of the way, the sooner can better care be given the chicks, and it is a nuisance to have twenty or thirty sizes of chicks on the place, neither will the smaller ones do so well when running with larger ones.

The Brooder

The day of the small brooder in commercial poultry plants seems to be passing. Time was when fifty chicks were given as the maximum number for a brooder, and that is probably as many as will do well in the average brooder or hover; but the advent of the brooder stove has made it possible to take care of from ten to twenty times this number satisfactorily. This brooder stove will prove a great boon to the farmer as soon as he goes to hatching his season's crop in the same manner as he goes at planting his season's crop. To be able to put the whole season's hatch into one brood, or to have only one or two sizes of chicks to look after, is getting the work down to a minimum, and will make the job of raising the season's crop of chickens more of a pleasure. The seed and poultry supply houses of Denver all carry these mammoth brooders in stock, and the price is only about twice that of the old style galvanized iron hovers. The latter hover is still the best brooder for those who are raising only a small number of chicks, while the old hen is still the most satisfactory for late hatching and brooding.

But it is a waste of money to buy any brooder unless a suitable place can be provided for it. The room or coop in which the brooder is kept must be so well built that it can be kept comfortable at all times. Chicks will not do well if they are obliged to stay under the hover for warmth; if the room cannot be kept at a comfortable temperature from the heat of the brooder lamp or stove, some other means of heating must be provided. It is a good plan to have the space rather small for the first week or two, graudually furnishing more room as needed, but chilling must be avoided if success is to be had.



Poultry Book Latest and best yet; 144 pages, 215 beautiful pictures; hatching, rearing, feeding and disease information. Describes bdsy Poultry Farm handling 58 pure-bred varieties. Tells how to choose fowls, eggs, incubators, sprouters. This book worth dollars mailed for 10 cents. Berry's Poultry Farm, Box 66, Clarinda, Iowa

The Farm Home

Continued from Page 17.

portion to the comfort and looks of the wearer.

The ideals presented by Mrs. Chas. A. Lory on "The Child's Part in the Co-operative Interests of the Home" made a deep impression upon the mothers, who listened most intently, and followed Mrs. Lory thru the many avenues of training and culture practiced by the mother who is striving to make the life of her children measure up to the standard of true living in a well-managed co-operative family life. Many were desirous of knowing more of the value of such direction in the lives of our children.

A scholarly address on "The Nutrition of the Child" was given by Dr. Amesse of Denver, and much appreciation was expressed by all who listened to this timely discussion.

Much pride and good feeling prevailed when Mrs. Agnes Riddle, member of the State Senate, was introduced and in her masterly and womanly way made it clear that women have a work to do that cannot be done by mere man—that the ballot is not a gift from men but a God-given gift to women from the first. Mrs. Riddle said: "It is said that women forget everything when they get into politics. Some say women no longer want to rock the cradle. It is not so! Where would the world be today if the women neglected to rock the cradle?"

So many good things were brought out at these sessions that it would take this whole edition of Western Farm Life to tell you about them. We'd do it, at that, if the editor would let us, but we know he'd decline, so we promise you more about our meetings in subsequent editions.

Profitable Marketing of Eggs Depends on Farmer

Continued from Page 3.

aged) laid 132 eggs per hen, while varieties having no broodiness (averaged) laid 125 eggs.

Two-thirds of the eggs were laid in the first half of the day.

All WHITE varieties averaged 156 eggs per year.

All BLACK varieties averaged 148 eggs per year.

All BUFF varieties averaged 141 eggs per year.

All PARTI COLORED varieties averaged 133 eggs per year.

All ROSE COMB varieties averaged 147 eggs per year.

All SINGLE COMB varieties averaged 141 eggs per year.

All varieties laying white shelled eggs averaged 141 eggs per year.

All varieties laying brown shelled eggs averaged 137 eggs per year.

All varieties with smooth shanks averaged 142 eggs per year.

All varieties with feathered shanks averaged 114 eggs per year.

In November each hen (averaged) laid 4.5 eggs.

In December each hen (averaged) laid 7.5 eggs.

In January each hen (averaged) laid 9.5 eggs.

In February each hen (averaged) laid 12.8 eggs.

In March each hen (averaged) laid 19.2 eggs.

In April each hen (averaged) laid 19.4 eggs.

In May each hen (averaged) laid 18.2 eggs.

In June each hen (averaged) laid 15.5 eggs.

In July each hen (averaged) laid 14 eggs.

In August each hen (averaged) laid 12.2 eggs.

In September each hen (averaged) laid 10.6 eggs.

In October each hen (averaged) laid 6.9 eggs.

Barbed Wire Cuts

Please give treatment for barbed wire cuts and open sores on horses and cattle.—J. R. S., Logan Co., Colo.

A healing lotion for barbed wire cuts or any open sores is made of:

Oil of hemlock, ½ ounce; oil of cedar, ½ ounce; oil of sassafras, ½ ounce; oil of organum, ½ ounce; gum of camphor, 2 ounces; raw linseed oil, ½ pint. Thoroly mix, apply one to four times a day as the case demands. I have had great success with this lotion for twenty-five years past. Try it.—J. W. Weaver.

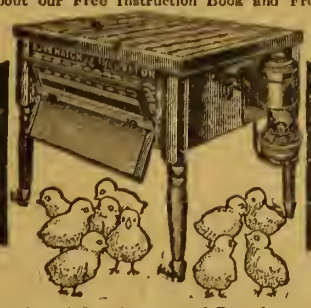
Book of Success Stories—Free

We will send to you Free, upon request, a copy of the Sure Hatch Catalogue. Every Farmer, Farmer's wife, and Poultry Raiser, should have this great book. It tells true stories by farmers and farmers' wives of their success with the Sure Hatch Incubators. You will find the stories in this book, the pictures of these Sure Hatch users and their chickens, interesting. This book tells you also all about the scientific construction of the Sure Hatch Incubators and Brooders, and of our generous 1917 offer. How we give all fixtures Free—no extra charges, everything complete at one price. Of the great Uncle Sam Poultry Book — 69 pages — 36 chapters and sub-chapters on hatching, feeding, raising and marketing poultry and eggs, also given free with the Sure Hatch. Also about our Free Instruction Book and Freight Paid anywhere.

Uncle Sam's Poultry Book Free

Freight Paid Anywhere

SURE HATCH



A Success that Means Something To You!

Fixtures Free Instruction Book Free

For 19 years we have built Sure Hatch Incubators and Brooders. Hundreds of thousands have been sold to shrewd farmers and farmer's wives. Thousands have written us telling of their success, the money they made with Sure Hatch Poultry, of the strong, sturdy chicks that come from the Sure Hatch. How they succeeded where others failed. This success of your friends and neighbors means something to you. For you, too, with little time and attention can make big extra money. You can read all these interesting facts in

Our Big Book, FREE! Simply send your name and address on a postal and get our Big Catalogue Free! Learn all about these successes and the Sure Hatch, no trouble or expense.

SURE HATCH, Box 51, Fremont, Nebraska

"Sure Hatch Chicks Make Sure Profits"

TOM BARRON STOCK—282-EGG BLOOD

That is the dam's record of male in pen No. 1, imported from Barron's plant in December, 1915. Our strain of Leghorns lay and pay. They make money for us; they will for you.

DAY-OLD CHICKS——EGGS FOR HATCHING

From strong, healthy range-raised stock—sure winners at the egg basket. If you want eggs and profit get the bred-to-lay kind—tested 7 years. Our prices are very reasonable. FREE CATALOG. Send for your copy—do it now. Satisfied customers all over west.

FOWLER EGG FARM Fowler, Colorado

BABY CHICKS——EGGS FOR HATCHING

HIGHEST QUALITY AND THEN THE LOWEST PRICE POSSIBLE. WE ARE THE LARGEST BREEDERS OF IMPROVED STRAINS PURE-BRED

Single Comb White Leghorns

In Colorado. All eggs or chicks from our own matings on our own farm, hatched by experts. You take no chances; safe delivery guaranteed. Colorado climate poultry will give your flock a new lease on life that cannot be had in any other way. Send for catalog. It illustrates and describes all.

Merk's Poultry Farm, Box L, Rocky Ford, Colorado

Notes on State Grange Session

By Rudolph Johnson, Secretary

The attitude of the Colorado State Grange on various matters may be indicated by noting the action of the delegates on some of the matters before the convention. Action was taken as follows:

A demand that metal mines be assessed as are farms, on a full valuation basis.

Commending the work of the Colorado Tax Commission, in equalizing the tax burden and forcing railroads and other corporations to pay their just share for the support of counties and schools.

Denouncing the Shields water power bill now before Congress.

Tabling a resolution which opposed universal military training.

Promoting a herd law with provisions for a county or district local option, and free range outside of the districts.

Asking for greater appropriations for the Colorado Agricultural College.

Commending the system of employing county agriculturists.

Asking that the State Geologist at the University of Colorado be given funds to investigate supplies of water for drinking purposes on the plains, and on the western deserts.

Endorsing the proposed school code for Colorado, which was prepared by the leading educators of the state.

Voting in favor of postalizing the telegraph lines.

Demanding that farmers be allowed to shoot pheasants in localities where they damage crops.

Opposing any form of bond issue for road building purposes. Otherwise thoroughly in sympathy with the state highway commission.

Denouncing professional locators of homesteads, and issuing a warning to prospective settlers as to actual conditions on the barren and desert public lands in parts of the state.

Demanding a pure seed law for Colorado, as drawn by the Grangers of Boulder county.

Condemning the Union Pacific Railroad company for its action in taking land within a 400 foot strip along the right of way, and asking for state or federal aid in returning title to the farmers.

Investigation of the hail insurance proposition.

Voting to send the Maple Grove Grange drill team to the National Grange next November, and the providing of funds for the purpose.

At the meeting of the policyholders of the Grange Mutual Fire Insurance company, Monday, January 15, Albert Wolf and F. J. Bond were re-elected as members of the board of directors. The report of the secretary showed that about $5,000,000 of insurance was in force on the books of the company, and that an increase of $1,200,000 was made during 1916.

In the debate on the herd law some delegates were found who were in favor of a strict, state-wide proposition, but the majority favored a law which would allow certain sections to adopt a herd law and permit the ranges and mountains and deserts to be grazed without herding.

Souvenir badges were given to all the delegates, the first time this was ever done by any session of the Colorado State grange.

The simple ceremony in celebration of the fiftieth anniversary of the founding of the grange was interesting because of the talks by the pioneers of the order in Colorado, notably Mrs. Levi Booth, who with her husband, kept the grange alive for many years, following the disastrous financial deals of the seventies.

The memorial services were held in honor of Mrs. Frances Montgomery and Jerre Leggett of Boulder Valley grange; George A. Blinn of Castlewood grange, Mrs. George Dane of Cherry Creek grange and Mrs. P. Ricketts of Empire grange. The chaplain of the State grange, P. Ricketts of Fort Collins, did not conduct the memorial services, as is his custom.

A proposition to pay railway fare of delegates to the State grange was brought forward by motion, but was defeated after a lengthy debate because of the difficulty of financing the scheme.

The dues from subordinate granges to the State grange remain the same, by direct motion. This was done to provide funds to carry on the work of organizing new granges, and also to finance the purchasing agent.

The by-laws were amended to provide for appointment of the members of the legislative committee by the executive committee instead of electing them. The executive committee has appointed J. A. Newcomb of Golden, Moses Hoover of Boulder and W. L. Boatright of Broomfield.

Mr. and Mrs. R. T. Kerr of Durango traveled the longest distance of any of the delegates to attend the sessions.

Prominent among the delegates from the newly organized granges were Harry T. Baker of Olney Springs, Lewis Casten of Briggsdale, L. H. Hale of Orchard, John Hastings of Merino, L. F. Brammeier of Burlington, F. D. Bullard of Laird, J. C. Buell of Haswell, R. H. James of La Junta, Clark Kitchen of Rocky Ford and B. D. Lougheed of Keensburg.

News of the Granges

Corn Valley Grange No. 180 have started holding their regular meetings the first of every month. The main feature of their Grange is the fire insurance, nearly every member being a policy holder.

On January 6th the Worthy State Grange Master was present, and after our business meeting and dinner, a short literary program was rendered, after which Mr. Morris installed the officers.

Riverside Grange No. 203 had the government man out lately, who gave an illustrated lecture on care, feed and treatment and how to ward off disease. The attendance has not been good, but the Grange is entering on a contest with great enthusiasm, which will put new life into the organization. The question of free distribution of government seed was taken up at the meeting of January 23rd.

Rockaway Grange No. 292, Kauffman, Colo., had an open meeting on January 1, 1917, to install officers. The grange gave an oyster supper. The evening was spent with music, songs and speeches. There were about 60 present. We have 16 applications for new members at our next meeting. We have a good prospect for a good grange here, as all the officers are doing their part and the members are just as busy and interested with the work. Chas. Bell, past master, installed the officers.—Andy Smith, Master; Geo. Faulhaber, Secretary.

Chivington Grange No. 231 held public installation of officers which was well attended. An oyster dinner was tendered by the men, who baked and furnished the pies for the event. A short program was enjoyed by all. This grange handled three cars of coal this winter.

Duroc Jersey

Continued from Page 18.

F. L. Crow; second, F. L. Crow; third, C. F. Burke, Rocky Ford, Colo.

Class 45—Young Herd: First, Colorado Agricultural College; second, J. W. Brauer; third, J. B. Benedict.

Class 46—Young Herd Bred by Exhibitor: First, J. W. Brauer; second, J. B. Benedict; third, F. L. Crow.

Class 47—Get of Sire: First, J. W. Brauer; second, F. L. Crow; third, J. B. Benedict.

Class 48—Produce of Dam: First, J. W. Brauer; second, F. L. Crow; third, C. F. Burke.

Senior Champion and Grand Champion Boar: Caldwell Martin.

Junior Champion Boar: J. W. Brauer.

Senior Champion Sow: Colorado Agricultural College.

Junior Champion and Grand Champion Sow Caldwell Martin.

Berkshires

Class 1—Boar 2 years old or over: First, C. W. Henry, Greeley, Colo.; second, C. W. Henry, Greeley, Colo.; third, A. L. Weston, Littleton, Colo.

Class 2—Boar 18 months and under 24: First, C. W. Henry; second, Sutton & Porteous, Lawrence, Kan.

Class 3—Boar 12 months and under 18: First, C. W. Henry; second, Sutton & Porteous.

Class 4—Boar 6 months and under 12: First, Colorado Agricultural College, Fort Collins; second, Colorado Agricultural College, Fort Collins; third, Sutton & Porteous.

Class 5—Boar under 6 months: First, Sutton & Porteous; second, Sutton & Porteous; third, Colorado Agricultural College.

Class 6—Sow 2 years old or over: First, Sutton & Porteous; second, C. W. Henry; third, Colorado Agricultural College.

Class 7—Sow 18 months and under 24: First, Colorado Agricultural College; second, C. W. Henry; third, C. W. Henry.

Class 8—Sow 12 months and under 18: First, Sutton & Porteous; second, Colorado Agricultural College; third, C. W. Henry.

Class 9—Sow 6 months and under 12: First, Colorado Agricultural College; second, Colorado Agricultural College; third, Sutton & Porteous.

Class 10—Sow under 6 months: First, C. W. Henry; second, C. W. Henry; third, Sutton & Porteous.

Class 11—Aged Herd: First, C. W. Henry; second, C. W. Henry; third, Sutton & Porteous.

Class 12—Aged Herd Bred by Exhibitor: First, Sutton & Porteous; second, C. W. Henry.

Class 13—Young Herd: First, Colorado Agricultural College; second, Sutton & Porteous; third, C. W. Henry.

Class 14—Young Herd Bred by Exhibitor: First, Colorado Agricultural College; second, Sutton & Porteous, third, C. W. Henry.

Class 15—Get of Sire: First, Colorado Agricultural College; second, Sutton & Porteous; third, C. W. Henry.

Class 16—Produce of Dam: First, C. W. Henry; second, Sutton & Porteous.

Champion Berksbire Boar: Senior: C. W. Henry.

Champion Junior Boar: Colorado Agricultural College.

Champion Senior Sow: Sutton & Porteous.

Champion Junior Sow: C. W. Henry.

Grand Champion Boar: C. W. Henry.

Grand Champion Sow: Sutton & Porteous.

HORSES AND MULES

Percheron Horses

Class 1—Stallion4 years old or over: First, Woods Bros. Co., Lincoln, Neb.; second, T. B. Bowman & Sons, Boone, Neb.; third, W. S. Corsa, White Hall, Ill.

Class 2—Three-Year-Old Stallion: First, T. B. Bowman & Sons; second, Woods Bros. Co.; third, T. B. Bowman & Sons.

Class 3—Two-Year-Old Stallion: First, Woods Bros. Co.; second, Finch Bros., Joliet, Ill.; third, Jos. Rousselle & Son, Seward, Neb.

Class 4—Yearling Stallion: First, W. S. Corsa, White Hall, Ill.; second, Howard Jay, Longmont, Colo.; third, Woods Bros. Co., Lincoln, Neb.

Class 5—Mare 3 years old or over: First, W. S. Cossa, White Hall, Ill.; second, T. B. Bowman & Sons, Boone, Neb.; third, T. B. Bowman & Sons.

Champion Percheron Stallion: Woods Bros. Co., Lincoln, Neb.

Reserve Champion: W. S. Corsa, White Hall, Ill.

Class 6—Percheron Filly 2 years old and under 3: First, W. S. Corsa; second, T. B. Bowman & Sons, Boone, Neb.; third, Howard M. Jay, Longmont, Colo.

Class 7—Percheron Filly 1 year old and under 2: First, T. B. Bowman & Sons; second, Howard M. Jay; third, George Eggert, Newton, Iowa.

Class 8—Percheron Colt under 1 year: First, John E. Burns, Louisville, Colo.; second, Geo. Eggert, Newton, Ia.

Class 9—Four Percherons, any age, get of one sire: First, W. S. Corsa, White Hall, Ill.; second, T. B. Bowman & Sons, Boone, Neb.; third, John E. Burns.

Class 10—Two Percherons, any age, produce of one dam: First, T. B. Bowman & Sons; second, John E. Burns; third, Geo. Eggert, Newton, Ia.

Champion Percheron Mare: W. S. Corsa, White Hall, Ill.

Reserve Champion Percheron Mare: T. B. Bowman & Sons.

Shires

Class 21—Stallion 4 years old or over: First, Daniel Kelly & Son, Lincoln, Neb.; second, Jos. Rousselle & Son, Seward, Neb.; third, W. W. Buchanan & Son, Ogalalla, Neb.

Class 22—Stallion 3 years old and under 4: First, Jos. Rousselle & Son; second, Woods Bros. Co., Lincoln, Neb.; third, E. M. Searle, Jr., Ogalalla, Neb.

Class 23—Stallion 2 years old and under 3: First, Jos. Rousselle & Son; second, Finch Brothers, Joliet, Ill.; third, George Eggert, Newton, Ia.

Class 24—Stallion 1 year old and under 2: First, Finch Brothers; second, Jos. Rousselle & Sons; third, Woods Bros. Company.

Champion Stallion: Jos. Rousselle & Sons.

Reserve Champion Stallion: Jos. Rousselle & Sons.

Class 25—Mare. 3 years old or over: First, E. M. Searle, Jr.; Agalalla; second, L. L. Owen, Denver; third, E. M. Searle, Jr.

Class 27—Filley 1 year old and under 2: First, E. M. Searle, Jr.; second, E. M. Searle, Jr.

Class 28—Colt under 1 year: First, E. M. Searle, Jr., Agalalla, Neb.; second, W. W. Buchanan, Ogalalla, Neb.; third, W. W. Buchanan & Son.

Class 29—Get of Sire: First, Finch Brothers, Joliet, Ill.; second, W. W. Buchanan.

Class 30—Produce of Dam: First, Finch Brothers; second, George Eggert, Newton, Ia.; third, E. M. Searle, Jr.

Champion Mare: E. M. Searle, Jr.

Reserve Champion Mare: E. M. Searle, Jr.

Class 11—Stallion 4 years old or over: First, Woods Bros. Co., Lincoln, Neb.; second, Jos. Rousselle & Son, Seward, Neb.; third, George Eggert, Newton, Ia.

Class 12—Stallion 3 years old and under 4: First, Lester Beveridge, Arapahoe, Colo.; second, George Eggert; third, Finch Bros., Joliet, Ill.

Class 13—Stallion 2 years old and under 3: First, Jos. Rousselle & Son; second, Woods Bros. Co.; third, Howard M. Jay, Longmont, Colo.

Class 14—Stallion 1 year old and under 2: First, Jos. Rousselle & Son; second, Woods Bros. Company; third, Finch Brothers.

Champion Stallion: Lester Beveridge, Arapahoe, Colo.

Reserve Champion Stallion: Woods Bros. Company.

Class 15—Mare 3 years old or over: First, Lester Beveridge; second, Lester Beveridge; third, Howard M. Jay.

Class 34—3-year-old Mare or Gelding: First, Fred Muhme, Longmont, Colo.; second, Clarence Bixler, Boulder, Colo.; second, Clarence Bixler, Boulder, Colo.; third, J. D. Brunton, Aspen, Colo.

Class 36—Draft Mare with Colt under 1 year old: First, Fred Muhme, Longmont, Colo.; second, Fred Muhme, Longmont, Colo.

Class 37—Pair Draft Horses or Geldings: First, Fred Muhme, Longmont, Colo.; second, J. D. Brunton, Aspen, Colo.; third, Ward Auction Co., Denver.

Class 33—American Saddle Stallion, 3 years old or over: First, J. O. D. Ranch Co., Aroya, Colo.; second, J. A. Osner, Denver.

Class 31—Standard Bred Stallion, 3 years old or over: First, John E. Burns; second, George Henry, Denver; third, Herbert L. Bartels, Denver.

Class 40—Mule 3 years old or over: First, John 5. Burns, Louisville, Colo.; second, John E. Burns; third, John E. Burns.

Class 42—Mule Colt under 1 year: First, J. A. Osner, Denver; second, John E. Burns; third, Chas. Gallagher, Littleton.

Class 43—Pair of Mules weighing over 2,400 lbs.: First, John E. Burns; second, J. A. Osner.

Class 44—Pair of Mules weighing

Continued on Page 21

Report on Two Potato Meetings

Continued from Page 8.

friends we visited. They were under size, lacked flavor and were soggy.

The Wisconsin Meeting.

Then we went to Eau Claire, Wis., to the State Potato Growers' Association. It was the best thing of the kind I ever attended. They have some live men at the head and we had four very busy and interesting days. From 9 to 12, 2 to 6, and 7 to 9, and every session attended by many practical growers. The program was simply immense and the practical questions brought out everything in the subject. The college had a practical demonstration of dipping seed in corrosive sublimate, moving pictures showing spraying machines at work in the field, fields where half were sprayed and part left, and later views of the same field showing how the spraying was so much better, and the result when dug; also figures showing one spraying, two and three times, and the different machines and the pressure of each. The whole show was educational in every line. The potato exhibit was the best I ever saw. The call for exhibits was not under 8 ounces nor over 12 ounces, and they ran about 10 ounces.

The second morning Prof. Fitch turned up at our hotel and we walked over to the show together, and as we walked down the long hall and saw the wonderful even exhibits I said, "I am very glad I am not in your shoes today as judge, for it is too close a thing for me." Seventeen counties that had county agents had booths fixed up on the side and one end with colored papers, and boxes 12x16 about 2 inches deep, and on a long double table that sloped both ways was the prize stock. This was in the middle of the hall, so every one could see by the card whose it was. The management furnished the papers and boxes and printed cards in colors. Everything was so complete. Those competing had to have 10 potatoes and the score was 10 for each potato, or 100 to win. One man had 9 almost perfect and one that did not quite weigh 8 ounces, so he got only 90. Quite a number got 94 and up, but only one got 100 per cent.

Prof. Waid of the Michigan College was on the program, and at the close of his talk explained how they judged and how each point was decided. It was very instructive. They measured lengthwise, crossways and thickness and counted the skin one point and the number of the eyes. Several county agents gave an account of their work. The talk by the college on certifying seed was good and their talk to the agents for the next year was especially good.

Closes With a Banquet.

The last night they had a big banquet at the hotel in the dining room by themselves, to which Mr. Sweet and I were invited and had the prize potatoes baked. All the exhibitors and officers and college people and the speakers, in all over 150, were there. The potatoes were the best we had seen since leaving home. I never attended such a cordial meeting. Wisconsin is doing as much if not more than any other state for the potato industry, and now she stands next to Maine and it will not be surprising if she soon stands as the leading state. Yet ten years ago she was the poorest in that line. The college has got some live wires for a fact and is doing a great work. Ten years ago Wisconsin potatoes were selling for 10c per 100 lbs. less than Greeley's, but for a number of years before this year, when their crop was hurt by the early frost, they were getting 10c more than we were because of their even size and shape. This was because of their pure seed and planting closer in the row on good ground. In his talk to the county agents the head of that department said, "Don't try to have more acres, but rather urge pure seed and better ground and a better quality." Of one county he said to the agent, "You have too many acres now and on too poor ground. Urge less acres gut better ground and quality. Plow up more grass and put on more manure."

I never attended a convention that had so much good and so much cordiality in it. The college people and all the officers urged us to come again, and we surely will if it is possible. President Hicks is a retired farmer. Prof. J. G. Milward is a live wire and kept things moving, and the result is the state is coming to the front in potato growing very rapidly. We have a much better opportunity it seems to me, but we have got to improve our methods or we will be left in the race. We have got to pay more attention to our seed, plant closer in the row and raise what the trade is calling for, or some day not far away we will see our market taken from us. This much I saw from my trip. In my closing article I will give more of my observations along this line.

Farmers' and Stockmens' Exchange

Advertisements will be inserted in this department for 5c per word; four or more insertions, 4c a word each insertion. Remittances can be made by postoffice money order or personal check. Advertisements are set in uniform style, no display type or illustrations admitted under any circumstances. Every figure and initial counts as one word. Guaranteed circulation over 50,000 copies each issue. WESTERN FARM LIFE is issued semi-monthly the first and fifteenth of each month. Advertising copy for this department must reach us ten days before date of issue. It carries the most classified advertising because it gives you best results. Send us in a trial advertisement. Write for proof showing how these columns pay advertisers.

POULTRY

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PLYMOUTH ROCKS

BARRED PLYMOUTH ROCK COCKERELS—farm raised, $2.00 to $2.50. Mrs. Frank Davis, Hollbrook, Neb.

WHITE ROCKS—PULLETS ONE DOLLAR; hens and cockerels, one-fifty each. Lone Tree Rauch, Carr, Weld Co., Colo.

BARRED PLYMOUTH ROCK COCKERELS FOR sale—From extra good laying strain; $2 to $3 each. Mrs. C. W. Douglass, Wray, Colo.

REMOVAL SALE—BREADWINNER WHITE Rocks. Blood of 200 to 301 egg layers. Particulars. Doble, 2434 So. Race St., Denver.

WINTER LAYERS—BARRED PLYMOUTH Rock eggs $1 for 15; $4 for 100. Mrs. Lou Edwards, 1105 Garfield Ave., Loveland, Colo.

PARTRIDGE ROCKS. LARGE TYPE COCKerels, good color, ready for service. Eggs ready for early hatching. Roy Sutton, Minneapolis, Kansas.

BARRED ROCK COCKERELS AND PULLETS. Also baby chicks, Barred Rock and White Leghorn after March 1st. Green Poultry Co., Haigler, Neb. Established 1910.

BARRED PLYMOUTH ROCK COCKERELS. Heavy egg-laying strain. Large boned, fine barred, yellow-legged. Price $1.50 to $2.00 each and up. Mrs. Raymond Voss, Hubbard, Neb.

LONEY'S EGG STRAIN BARRED ROCKS.—Some choice cockerels left. On March 1st will sell 100 early pullets that have laid steadily since Oct. 1st. Get few good breeders and start right. W. C. Loney, Greeley, Colo.

PARTRIDGE PLYMOUTH ROCKS — THE beauty and utility breed, stock for sale that are prizewinners. Pullets $2.00, cockerels $3.00 to $5.00 each. Eggs for hatching $1.50 and $3.00 for 15 eggs. Satisfaction guaranteed. A. R. Stover, Manzanola, Colo.

LEGHORNS

SINGLE-COMB WHITE LEGHORN COCKERels. Fine, large type. Mrs. Lydia Fuller, Clyde, Kansas.

SINGLE-COMB WHITE LEGHORN EGGS. English Barron strain. Baby chicks. F. B. Morger, Fowler, Colo.

FINE SINGLE-COMB BROWN, BUFF AND White Leghorn cockerels $1.50 up. L. P. Harris, College View, Neb.

HEWITT'S S. C. BUFF LEGHORNS, COCKERels $2.00 each. Eggs $1.00 per 15, 50 for $3.00, 100 for $5.00. Mrs. Philo Hewitt, Lexington, Neb.

RIVERSIDE POULTRY FARM S. C. WHITE Leghorns. Heavy winter layers. Range raised. 12 years in the business. Hatching eggs, baby chix for sale. H. D. Walker, La Junta, Colo.

EXTRA GOOD SINGLE COMB WHITE LEGhorns—Pure white, low-tailed males mated to heavy laying females. Eggs $5.00 per 100; setting $1.50. Order now. E. D. Allen, Inland, Neb.

SINGLE-COMB BROWN LEGHORNS, TRIO $10.00, pen $15.00, cockerels $2.50 up, eggs $1.00 hundred. Setting $2.00. Prepaid. Chas. Bowlin, Olivet, Kansas.

S. C. W LEGHORNS, HATCHING EGGS FERtility guaranteed; day old chix, born with a "hustle" in them From trap nest recorded and Hoganized parents. Order now for March to July deliveries. Satisfaction guaranteed. Established 1908. Rosawill Poultry Farm, R. No. 4, Box 60, Denver, Colo.

RHODE ISLAND REDS

SINGLE COMB RHODE ISLAND REDS. EXhibition and heavy laying strain. Good as the best in the U. S. Eggs $1.50 up. W. V. Lewis, 1265 So. Vine St., Denver, Colo.

EXHIBITION AND HEAVY LAYING TYPE Single Comb Reds We are the oldest breeders of reliable Reds in the West. Eggs now ready for hatching, $6.00 per 100. Send for circular. Lower's Poultry Farm, Arvada, Colo.

SIX GRAND PENS ROSE COMB REDS, mated to roosters costing $15.00 to $50.00. 15 eggs $2.50. 30 eggs $4.00. 50 eggs $6.00. Pure bred range flock, $5.00 per 100. Baby chicks. Send for catalog. W. R. Huston, Americus, Kan.

FREE—HOW TO MATE AND BREED RHODE Island Reds. Just what you want to know but could not get correct information. Send stamp. Trapnested stock, both combs, big, dark velvety red strain for sale. Ava Poultry Yards, Ava, Mo.

ORPINGTONS

ORPINGTONS, WHITE OR BUFF. LIST FREE. Frank Lewis, Superior, Neb.

BUFF ORPINGTON COCKERELS—BIG, HUSKY breeders. Cocks 12-13 lbs. Good buff. G. Stewart, Henderson, Iowa.

PURE WHITE ORPINGTON COCKERELS. Good type from good laying stock $2.50 each. A bargain—order soon. Mrs. John L. Fletcher, Wiley, Colo.

EGGS, EGGS, EGGS—FROM MY S. C. BUFF Orpingtons that are Buff; not the cheapest, but the best. They weigh, win and lay. Write me for prices. F. M. Shank, Route 2-A, La Junta, Colo.

WYANDOTTES

WHITE WYANDOTTES. CHOICE YOUNG stock for sale. Miss Anna Lansdown, Box 291, Fort Lupton, Colo.

WHITE WYANDOTTE EGGS FROM TRAPnested stock. Mary M. Wright, Route 2, Boulder, Colo.

ANCONAS

MATCHLESS MOTTLED ANCONAS, EGGS $1.50, $2.00, $2.50, $3.00. Prize winning stock Cockerels $5. Mrs. D. S. Davis, 140 Jackson St, Denver, Colo.

BRAHMAS

MY LIGHT BRAHMAS AGAIN WIN SWEEPstakes in the big 1917 Denver Stock Show. I have over 100 beautiful standard bred L. Brahmas in my pens. Cockerels and eggs for sale. Prices reasonable. E. Grosser, W. 23rd and Perry, Denver.

CORNISH

QUALITY DARK CORNISH, THE IDEAL FARM fowl. W. W. Officer, Fowler, Colo.

MINORCAS

S. C. BLACK MINORCAS—PRIZE WINNERS. 14 prizes won out of 16 birds exhibited at Kansas State Fair. Stock, eggs and baby chix for sale. F. Kremer, Manchester, Okla.

TURKEYS

BOOK YOUR ORDERS NOW FOR BRONZE Turkey Eggs, 20c apiece. Pure bred, two-year-old stock. Mrs. C. J. Davidson, Fort Lupton, Colo.

GUINEAS

GUINEAS PROFITABLE—EASY TO RAISE AS quail, $5.00 trio. "The Copes," Topeka, Kan.

PEARL GUINEAS, $1.00 EACH. WHITE Guineas, $1.25. John Hass, Bettendorf, Iowa.

DUCKS

ROYAL BLUE STRAIN RAUEN DUCKS, $1.75 each. Eggs in season. Jas. Cassell, Fremont, Neb.

WHITE PEKIN DUCK EGGS, $1.25 PER SETting. Ducklings 22c each. A large, fast-growing strain. Wm. M. Jones, Arvada, Colo.

INCUBATORS

IT'S GOOD BIG HATCHES YOU WANT THIS year. Denver incubators are built and tested for this dry climate and positively do the work. Get our free catalog. Low prices, with freight prepaid. Coal heated colony brooders. Baby chicks and eggs for hatching from purebreds. Denver Incubator Co., 177 S. Broadway, Denver, Colo.

SEVERAL VARIETIES

BABY CHICKS, 11 STANDARD VARIETIES. Kansas Poulry Co., Norton, Kan.

FOR SALE—Chicks and eggs from S. C. W. Leghorns and Rhode Island Reds. J. O. Bartholomew, Rocky Ford, Colo.

WANTED TO HEAR FROM PEOPLE HAVing Red Bourbon Turkey hens for sale and the prices. H. B. Metzler, Franktown, Colo.

ROUGH ON LICE. NO POWDER, NO DUSTing. Gets lice in 24 hours or money back. Fifty cents postpaid. W. C. Loney, Greeley, Colo.

HALL'S S. C. REDS AND WHITE ROCKS WIN again at the Great Denver Stock Show. Eggs $1.50 per setting up. Mating list free. Stock for sale. Liston L. Hall, Gering, Neb.

IF YOU DON'T FIND ADVERTISED HERE what you want, write our classified advertising department and they will be glad to place you in correspondence with the right parties.

EGGS WANTED FOR HATCHING FROM PUREbred farm-raised stock. Write us what kind you have. Highest prices paid by the case. Denver Incubator Co., 177 S. Broadway, Denver, Colo.

COLUMBIA HATCHERY—ALL LEADING VArieties of baby chicks, cockerels and hatching eggs. Reds, Rocks, Leghorns, Orpingtons, etc. Live delivery of baby chicks guaranteed to your express office. We ship to all parts of Colorado, Wyoming, New Mexico. Write for price list. P. O. Box 1102, Denver.

COCKERELS, $2. PULLETS, $1.50 EACH. Can make up some good pens at very reasonable prices. All the leading breeds. Now is the time to order eggs for early spring delivery, $1.50 per setting; $6.00 hundred. Booking orders now for baby chicks. J. L. Keating, Box 357, Kansas City, Mo.

EGGS, EGGS—FROM THOROBRED TURKEYS, geese, 8 kinds of ducks, Pearl and White Guineas, Barred, White and Buff Rocks, Houdans, Rhode Island Reds, Hamburgs, Games, White and Silver Laced Wyandottes, Leghorns, Langshans, Light Brahmas, Minorcas, Cochins, Buff and White Orpingtons, Bantams, also Hares, Rabbits, Guinea Pigs and Fancy Pigeons. D. L. Bruen, Platte Center, Neb. Write wants.

PET STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

YOU CAN MAKE A GOOD LIVING IN YOUR back yard raising Belgian hares. Particulars and price list of all breeds, 10 cents. Thorson's Rabbitry, Aurora, Colo.

LIVE STOCK

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CATTLE

ONE REGISTERED HEREFORD BULL, ELEVen months old for sale. Mrs. Alice Wolfe, Flagler, Colo.

CHELMSFORD JERSEY FARM CAN SEND YOU a bull ready for service, registered. R. F. D. 58, Littleton, Colo.

REGISTERED HOLSTEINS AT BARGAIN. Three cows, three heifers, one bull. All A. R. O. ancestry. David Hamm, Rocky Ford, Colo.

WE CAN SELL 15 YEARLING BULLS AND about 30 bull calves, all registered, and of the best breeding and individuality. Among the yearlings are three herd headers, also one 4-year-old bull by Simoon. All at popular prices in order to sell. J. O. D. Ranch, Aroya, Colo.

HIGH CLASS JERSEYS—COUNT MAJESTY AT head of herd. His dam, Mandana's Lady Imp., last year gave 14,014 lbs. milk, 784 lbs. 1 oz. butter. His calves are showing up fine. Have one December bull calf by him for sale. He is good. Could spare one or two cows. Also Duroc hogs of best breeding. A. M. McClenahan, Greeley, Colo.

HOGS

REGISTERED BIG TYPE DUROC JERSEY hogs for sale. Edgemoor Farm, Littleton, Colo. Caldwell Martin, Owner.

REGISTERED DUROC JERSEY BOARS AND gilts. Sell at $15 up, according to age and quality. Registered gilts bred to our boars at $30 up. Our hogs top the market every time in Denver, and we hold the record on that market at $11.10 for 6-months-old barrows averaging 206½ lbs. J. O. D. Ranch, Aroya, Colo.

HORSES

NOBLE REX, REGISTERED SADDLE BRED stallion by son of Rex Donald, black, 16 hands, 1,200 lbs. Winner of the stallion class at Western Stock Show, Denver, 5 years old and the stallion to cross on our mares, on account of breeding bone, and individuality. Price $750.00. Will stand up to April 1st at the Denver Omnibus Co. Stables, Denver, in charge of Mr. Nate Fitzell. J. O. D. Ranch, Aroya, Colo.

FARMS AND RANCHES

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WANTED—TO HEAR FROM OWNER OF FARM or unimproved land for sale. O. K. Hawley, Baldwin, Wis.

WANTED—TO HEAR FROM OWNER OF GOOD ranch for sale. State cash price and description. D. F. Bush, Minneapolis, Minn.

FARM WANTED—Wanted, TO HEAR FROM owner of farm or fruit ranch for sale. O. O. Mattson, 2949 Cedar Ave., Minneapolis, Minn.

RANCH FOR SALE—140 A., GOOD IMPROVEments, 2 miles west of Gunnison on the Gunnison river. Fine dairy and fishing resort. Address Box 34, Gunnison, Colo.

FOR SALE—$2,000 BUYS A SMALL, OLD established, well paying dairy in coal mining town; will bear investigation. Address C. I., care of Western Farm Life.

FOR SALE—MOUNTAIN RANCH, 420 ACRES, well located, fair improvements, fenced, 100 acres cultivated; also a large acreage suitable for running sheep. C. W. Fairchild, 715 E. & C. Bldg., Denver.

TO FARMERS—WHY PAY RENT? ONE-HALF of crop annually will pay for fine irrigated land close to our town. Those having necessary tools and horses to farm with, this is a fine opportunity to get a good farm. Write today. Merino State Bank, Merino, Colo.

LAND—I HAVE PLACED OVER 400 FAMILIES in Weld County, mostly on homesteads and relinquishments. I know nothing desirable left open to entry, but can still furnish partly improved relinquishments or deeded lands at very low price. Call for list. Every statement guaranteed. Land shown by auto from Denver. Mackley, 1643 Champa, Denver, Colo.

OREGON AND CALIFORNIA RAILROAD CO. Grant Lands. Title to same revested in United States by Act of Congress dated June 9, 1916. Two million three hundred thousand acres to be opened for settlement and sale. Power site, timber and agricultural lands. Containing some of the best land left in United States. Now is the opportune time. Large sectional map showing lands and description of soil, climate, rainfall, elevations, etc. Postpaid for one dollar. Grant Lands Locating Co., Box 610, Portland, Ore.

HELP WANTED

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WANTED—LIVE AGENTS AT ONCE, EXCELlent terms. Falls City Nursery, Falls City, Neb.

MAN TO WEAR FINE SUIT, ACT AS AGENT. Big pay, easy work. Banner Tailoring Co., Dept. 502, Chicago.

THOUSANDS GOVERNMENT JOBS OPEN TO men-women; $75.00 month. Steady work. Short hours. Common education sufficient. Write immediately for free list of positions now obtainable. Franklin Institute, Dept. W177, Rochester, N. Y.

WE WANT A RELIABLE MAN OR WOMAN TO handle subscriptions in each community. Liberal terms. Write us today. Western Farm Life, Denver, Colo.

WANTED—IMMEDIATELY, 500 MEN, 20-40, for railway motormen and conductors; all parts United States; $60-$100 monthly. Experience unnecessary. Send stamp for application blank. National Railway, Dept. 188, Kansas City, Mo.

SALESMEN WANTED TO CANVASS THE farming and threshing trade, soliciting orders for lubricating oils, greases and paints. Excellent opportunity for right party. Previous experience unnecessary. Address at once, The Victor Oil Company, Cleveland, Ohio.

LUMBER

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

LUMBER CHEAP DIRECT TO YOU. PACIFIC Coast Sawmill Co., Portland, Ore.

LUMBER—POSTS AT LOWEST PRICES. GET our delivered prices. Send lumber list for estimate. Pay after unloading. Kirk Company, Tacoma, Wash.

SEEDS

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BLACK HULLED WHITE KAFFIR SEED—Recleaned, $2.25 per bu. 1916 crop. Well matured. H. W. Chestnut, Kincaid, Kan.

DAHLIAS, 185 NAMED KINDS; CANNAS, HARDY flowers, shrubs and fruit. Write for prices. James McMullen, Franklin Ave., Council Bluffs, Iowa.

CHOICE SEEDS, DWARF AND STANDARD Kafircorn, Dwarf White and Yellow Milo Maize, White, Red and Black Cane Seed, Broomcorn seed, Sudan, Sweet Clover and other seeds. I. T. Reid, Goodwell, Okla.

FREE 1917 PLANTING GUIDE AND PURE Seed Book; 96 pages. Handsomely illustrated in many colors. Describes latest, best varieties vegetables, flowers, field crops, fruits, shrubbery, etc. A dictionary on gardening. Flower lover's delight. Field crop guide. An orchardist's manual. Berry-grower's book. A postal gets it. Don't buy seeds until you read it. Galloway Bros. & Co., Pure Seed Specialists, Waterloo, Iowa.

MISCELLANEOUS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

PLENTY OF MONEY TO LOAN ON CHOICE farms at 6 per cent. Paul B. Walker, Fort Morgan, Colo.

DELICIOUS ALFALFA HONEY FROM PRODucer. Two 60-lb. cans, $12.75. Satisfaction guaranteed. Wesley Foster, Boulder, Colo.

FOR SALE OR TRADE FOR LIVE STOCK—20 H. P. Reeves traction engine in good order, with plow and water tank if desired. J. W. Cummings, Glenwood Springs, Colo.

FARMERS AND STOCKMEN, IF TROUBLED with Loco Weed, you can kill it with our Loco Killer without chopping or digging. Also want men to handle territory. If interested, write Western Mfg. & Trading Co., Box 673, Denver, Colo., Successors to Weisenborn & Huck.

KODAKS, CAMERAS, PHOTO SUPPLIES—Ford's, the best kodak store, 1029 16th St., Opp. Old P. O., Denver, Colo., for Eastman Kodaks, all makes cameras, films, photo supplies, develop any size roll films, 10c; print pictures, 3c each and up; mail orders solicited; kodak and camera catalogs mailed free upon request. Mention this paper.

FREE FOR SIX MONTHS—MY SPECIAL OFfer to introduce my magazine, "Investing for Profit." It is worth $10 a copy to anyone who has not acquired sufficient money to provide necessities and comforts for self and loved ones. It shows how to become richer quickly and honestly. Investing for Profit is the only progressive financial journal and has the largest circulation in America. It shows how $100 grows to $2,200; write now and I'll send it six months free. H. L. Barber, 449-20 Jackson Blvd., Chicago.

PATENT ATTORNEYS

IDEAS WANTED — MANUFACTURERS ARE writing for patents procured through me. Four books with list hundreds of inventions wanted sent free. I help you market your invention. Advice Free. R. B. Owen, 162 Owen Bldg., Washington, D. C.

BEE SUPPLIES AND HONEY

BEE SUPPLIES OF BEST QUALITY. SEND for 68-page illustrated catalog. We also sell comb and extracted honey. The Colorado Honey Producers' Association, Denver, Colo.

Horses and Mules

Continued from Page 20

under 2,400 lbs.: First, John E. Burns.

Class 38—Jack any age: First, John E. Burns; second, Russell & Haymaker, Fort Collins; third, Hussell & Haymaker.

Class 39—Jennet 3 years old or over: First, Russell & Haymaker; second, John E. Burns; third, Russell & Haymaker.

Carlot Awards

In carlot cattle awards N. L. Harrison of Roggen, Colo., got the championship in feeders on a lot of Aberdeen Angus, with the reserve championship going to J. E. Braiden of La Jara, on Herefords.

Clayton & Murnan of Denver won the championship carlots of fat cattle and also the reserve championship. They showed two loads of very fancy cattle finished in their feed lots at Eaton.

Champion carload swine to Elmer Couchman of Lyons, Neb., on a fine lot of heavy Hampshires. Reserve championship to University of Nebraska.

Champion carload breeding heifers, Hereford Corporation of Wyoming. Reserve championship, N. L. Harrison, Jr., Roggen, Colo.

Champion carload registered bulls, George Chandler, Baker, Ore.; reserve championship, Hereford Corporation of Wyoming.

Champion carload fat sheep, Bruce Eaton, Eaton, Colo.

Live Items About Live Stock

With the enactment of the 640-acre homestead law, the death knell was sounded to free government range. The rush to get the grazing homesteads perhaps exceeded that when the enlarged homestead bill became a law. Hundreds and thousands of people, not in a position to make a personal selection when the act became a law, telegraphed their orders in to western land offices.

This act, perhaps more than any other, will reduce the free-range area and the first impression will be that livestock raising in the west will materially decrease; but the act will have just the opposite effect. Where in former years there were a few large herds, there will be hundreds of small ones; more attention will be given to the breeding of better grades and the providing of feed and shelter; more and better stock will be raised, and greater profits realized.

This act provides that any person qualified to make entry under the homestead laws, may enter such lands as have been designated "stock-raising lands," not exceeding 640 acres of unreserved public land, in a reasonably compact form. The secretary of the interior is given authority to designate on, application or otherwise, as stock-raising lands subject to entry under this act, such lands as are chiefly valuable for grazing, which do not contain merchantable timber, are not susceptible of irrigation and do not contain water power or reservoir sites.

When an applicant applies to enter land that has not been previously designated as stock-raising land, his application must be accompanied by corroborated affidavit, in duplicate, showing that the land applied for is of the character contemplated by the act. Such application, accompanied by the usual fees and commissions, will be received by the register and receiver, and suspended until the department may actually ascertain the character of the land. While the application stands suspended the applicant may not enter or improve the land until it has been definitely designated as stock-raising land.

A former homestead entry, of land of the character described in this act, will not prevent a person taking up land under this act. within the radius of 20 miles from the former entry, but the total amount of land entered may not exceed 640 acres.

In lieu of the area of cultivation required by the homestead law, persons entering land under the 640-acre act will be required to show improvements to the extent of $1.25 per acre, at the time of final proof, which may be within three to five years from date of allowance of entry. At least one-half of such improvements must be made within three years from date of entry.

NOTES OF THE STOCK SHOW

The eleventh annual National Western Live Stock Show excelled all previous ones in nearly every respect. The volume of business transacted during the week reached almost the $6,000,000 mark, which was more than $2,500,000 over that done last year.

C. F. Burk, owner of the Blue Ribbon herd of Durocs, made the highest sale in hogs. He sold a fine Duroc sow to J. B. Benedict of the Wyldmere Farm for $162.50.

D. Warnock & Sons, Loveland, Colo., exhibited their white bull, 'Model Type," which they purchased at the show last year for $2,500 and for which they have since refused $7,000.

The Guernseys were represented by H. D. Parker with a large exhibit of as fine a type as one could find in the country. This is comparatively a new dairy breed in the west, but one that is becoming quite popular.

The Pine Valley Dairy and Farm company, Colorado Springs, exhibited a number of choice animals of the milking Shorthorn strain. This is the "dual purpose" Shorthorn, which is fast growing in popularity among western farmers who want good milkers and at the same time cows that will bring calves that can be sold to advantage for beef if it is desired. Manager Rose advised that his herd was headed by Claywood, a son of Cyrus Clay, who won first prize and grand champion at the New York and Delaware state fairs two years in succession. Another herd bull is a son of Royal Darlington.

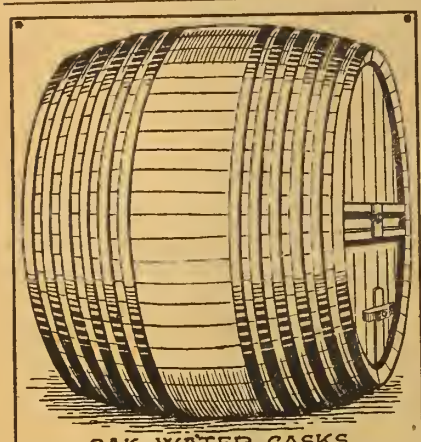
A few days ago, a party wrote in regard to the purchase of heifers of the milking Shorthorn strain. This is but one of many inquiries received concerning this breed and is an indication of the growing popularity of this strain. On March 14 and 15, at Farnam, Neb., will be held a public sale of milking Shorthorns—37 cows and calves and 63 bulls. Western farmers and stockmen desiring this blood will have an opportunity to secure choice animals raised in the open and well acclimated. These animals are consigned by 20 well-known Nebraska breeders, members of the Highline Shorthorn Breeders' association. The sale will be held under cover, and prospective purchasers will be entertained at a leading hotel by the association.

There is a big demand for pure-bred and registered draft mares and stallions among farmers of the intermountain states. They have all learned that it is about as easy to raise a pure-bred draft colt which, when mature, will readily sell on the place for $200 to $300, as it is to raise a common chunk that is difficult to sell at any price. Western farmers will have a special opportunity at the big Jarosa ranch sale, March 5, Longmont, Colo., where there will be 40 head of Percheron and Belgian mares and 12 head of the same breed of stallions sold at public auction in the Longmont sale pavilion. These horses will be sold to the highest bidder without reserve and the many people who are acquainted with the proprietor, Howard M. Jay, know that they will get a square deal. Some of this stock should be in every community and it would be well to organize and send a representative to this sale to secure one or more of the animals that have been raised under western conditions, thoroly acclimated and ready for immediate service both as breeders and in the field.

INSURANCE ON LIVESTOCK

The Iowa State Livestock Insurance Company of Des Moines, Iowa, has bought and taken over the business of the Rocky Mountain Livestock Company, and is giving full protection to those insured in the latter company. The Iowa State Livestock Insurance Company is one of the old reliable and substantial companies; it is doing business in fifteen states and has insurance in force to the value of $5,000,000.

Farmers and stockmen are beginning to realize that it is fully as important to insure their valuable animals against loss as it is to insure their buildings. While the animal is living, it will easily pay the premiums and when it dies it's value can be realized so that there is little, if any, loss suffered. See their advertisement in another column.—Adv.



OAK WATER CASKS
SIZE 10 ft. WIDE 10 ft. HIGH CAPACITY 100 BBLS.

Another Special Sale of Brewery Cooperage

We are so heavily oversold on the tanks we advertised last month, that we have decided to put on the market

60 OAK CASKS

well adapted for water tanks.

These are Oak Pressure Casks with rods, and will withstand pressure of 15 to 20 lbs. They are 10 feet wide and 10 feet high, with a capacity of 100 barrels. Oak staves are 3 in. thick and compressed thoroughly with twelve 4 in. iron bands (hoops). Have log foundations and manhole. Casks are in A 1 condition and if properly handled will last a lifetime. Can be used as shown in cut or set on end.

These Casks can be shipped on most railways set up. Will knock down when necessary, and properly mark for re-erection, without extra charge Will place on wagons or cars for

$75 each, CASH, F. O. B. Denver, Including foundation

We also have six 75-bbl. Casks, same as the above except that they have 3½ in. hoops, size 9 ft. each way: for sale at

$65 each, CASH, F. O. B. Denver, Including foundation.

THE PH. ZANG BREWING CO
DENVER

OVERLAND ALUMINUM SHOES

Sizes 1 to 13 Heights 6 to 17 in. Save Money and Prevent Sickness

Water-Proof, Rust-Proof, Rot-Proof. Warm in winter, cool in summer. Weight about the same as an all-leather work shoe. Will outwear several pairs of leather, rubber or wood soled shoes. No metal touches you. Thick felt insole. Comfortable to wear. Keep the feet in good condition. Best by test for all work in any weather. MONEY BACK if shoes do not meet with your approval. Write for FREE catalog which shows styles, gives prices and tells how to order. A postal brings it.

OVERLAND SHOE CO. Dept. 52a Racine, Wis

"MURRAY'S Chester White Bred Sows and Gilts." 50 head bred and ready to ship. Write for prices. Everything cholera immune.
CHAS. H. MURRAY, Friend, Neb.

JACK MEN, LISTEN

I have the largest 6-year-old jack west of the Missouri River for sale. Other bargains in Mammoth jacks and jennets.
Inspection Invited Satisfaction Guaranteed
W. H. WHEELER, Garden City, Kan.

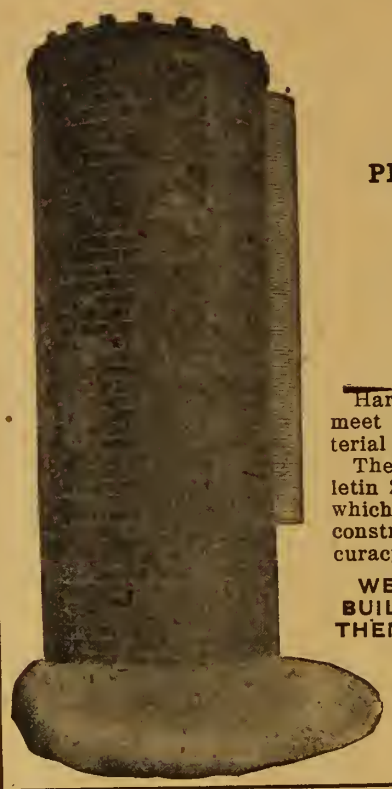
Home of the Giants

100 Jacks and Jennets. We handle the big kind. Special attention to bone, foot and weight. All ages. Prices from $300 up. All registered, all guaranteed, as represented.
BRADLEY BROS., Warrensburg, Mo.
65 Miles East of Kansas City. Main line Missouri Pacific.

Home-Bred Draft Stallions

Your choice $500, with the exception of two. Also mares for sale.
A. LATIMER WILSON, Creston, Ia.

THE PERFECT SILO



Vitrified Hollow Tile
Salt Glazed Hollow Tile

THE PERFECT SILO MUST BE
- airtight,
- Impervious to water,
- Strong,
- Durable,
- Convenient,
- Acid-proof,
- Alkali-proof,
- Fire-proof,
- Frost-proof,
- Wind and weather proof.
- Good-looking,
- Simple,
- Permanent,
- Free of Upkeep Cost,
- Not too Expensive.

Hard burned vitrified hollow clay tile silos meet every requirement, and no other material does.

The Colorado Experiment Station says, Bulletin 200, page 18: "It embodies every factor which goes to make a perfect silo." 224 silos constructed by us in two years prove the accuracy of this statement.

WE BUILD THEM
- Under positive written guarantee.
- At a cost no higher than wood or concrete.
- On terms that you can meet.

We make a special discount for March contracts.

THE HINMAN SILO CO.
1650 CHAMPA ST., DENVER, COLO.

HINMAN SILO CO.,
1650 Champa St., Denver, Colo.
Please send me, free of cost, your booklet describing the PERFECT SILO.
Name.....
Town..... State.....
How large a silo do you expect to build?.....
When do you expect to build?.....

Jersey Cattle

In recent advertising we have claimed to have the best Jersey cattle in Colorado. At the National Western Stock Show we won:

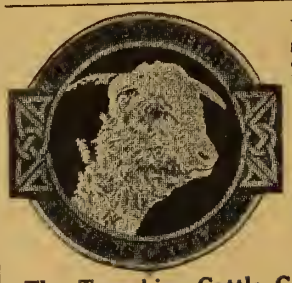
First Prize for aged bull; First Prize for senior bull calf; Junior Champion bull; Grand Champion bull.

First Prize for aged cow; First Prize for 2-year-old cow; First Prize for junior yearling heifer; First Prize for junior heifer calf; Senior Champion cow; Junior Champion cow; Grand Champion cow.

First Prize for aged herd; First Prize for young herd; First Prize for calf herd; First Prize for produce of cow; First Prize individual exhibit.

One cow milked over 40 lbs., by actual weight, in a day, on dry feed, during the show. We have Jerseys of this quality to sell at reasonable prices.

THE HINMAN SILO CO.
1650 Champa Street DENVER, COLORADO



We are the largest producers of pure bred Hereford bulls in the United States. Our bulls are as well bred as the average that are registered and the prices are much lower.

The Tompkins Cattle Company
(Incorporated)
Breeders of Pure Bred Herefords
General Offices 418 McPhee Building
DENVER, COLORADO

Stallions and Jacks

One 2-year-old registered Jack and two yearling Jacks; all big, heavy-boned. One 2-year-old registered Percheron stallion. One Belgian stallion, grade. One standard-bred stallion. Colorado raised and acclimated.
JOHN E. BURNS, Louisville, Colo.

BLUE RIBBON HERD

DUROC JERSEY HOGS
Everything Registered
Stock for Sale
C. F. BURKE, Rocky Ford, Colo.

BARGAINS Percherons, Belgians, Shire, Clyde, Suffolk, Hackney. Great Coach Stallions. Good Jacks. Time given purchasers.
R. I. LITTLE
Good Block Des Moines, Iowa

Shorthorn and Polled Durham Cattle

Valentine's Last, X12316; 452005 at head of beef herd. Claywood White, 427350 at head of milk type.
STATE INDUSTRIAL SCHOOL
Golden, Colorado

BLACK LEG LOSSES SURELY PREVENTED by CUTTER'S BLACKLEG PILLS

Low-priced, fresh, reliable; preferred by western stockmen, because they protect where other vaccines fail.
Write for booklet and testimonials.
10-dose pkg. Blackleg Pills, $1.00
50-dose pkg. Blackleg Pills, $4.00
Use any injector, but Cutter's simplest and strongest. The superiority of Cutter products is due to over 15 years of specializing in VACCINES AND SERUMS ONLY. INSIST ON CUTTER'S. If unobtainable, order direct.
The Cutter Laboratory, Berkeley, California

MILKING SHORTHORNS

Herd headed by Royal Darlington. Otis blood strain—Choice registered bulls, acclimated and ready for service.
Pine Valley Dairy and Farms Co.
Colorado Springs, Colo.

Registered Shorthorn Cows and Bulls for sale
JAMES McGINN
R. F. D. No. 3 Boulder, Colo.

THE HIGHLINE SHORTHORN BREEDERS' ASSOCIATION

Invites you to attend their Seventh Annual Sale of

SHORTHORN CATTLE

Which Will Be Held at

Farnam, Neb., March 14-15 1917

Consisting of 37 Cows and Calves and 63 Bulls

Consignments from the following herds:

W. H. Clement, Farnam, Neb.
Godfrey & Godfrey, Cozad, Neb.
S. R. Grandstaff, Moorefield, Neb.
A. O. Hicks, Farnam, Neb.
J. L. Hicks, Farnam, Neb.
F. B. Kerr, Farnam, Neb.
W. W. Kibben, Curtis, Neb.
W. I. Knight, Stockville, Neb.
R. J. Lydic, Farnam, Neb.
A. A. Messersmith, Farnam, Neb.
Nebraska School of Agriculture, Curtis, Neb.
Wm. C. Reed, Stockville, Neb.
E. K. Souder, Moorefield, Neb.
Roy Stilley, Farnam, Neb.
Wm. Umberger, Elwood, Neb.
W. A. Walthers, Moorefield, Neb.
W. E. Wharton, Farnam, Neb.
James Wilson, Moorefield, Neb.
A. Zollars & Sons, Maywood, Neb.
E. W. Crossgrove & Sons, Farnam, Neb.

These cattle are raised in the open, acclimated to western conditions. They are well-bred, of good color. The bulls are a husky lot, with plenty of scale and good bone; ranging in age from yearling to aged-tried sires. These cattle have not been picked over; each breeder is selling his whole crop of bulls. The owner will be at ringside to answer all questions. The usual guarantee will be given and certificate of health will be furnished with each lot sold. Come and be our guest during the sale; we entertain at the Stebbins Hotel. Sale under cover; no postponement on account of weather.

If interested write for Catalog

E. W. CROSSGROVE, Sale Manager

Auctioneers, H. S. Duncan & H. W. Bick

Clerk, S. F. Parker

Farnam, Neb., is on the branch line of the Burlington Railroad, 180 miles east of Sterling, Colo.; 50 miles west of Holdredge, Neb., and 250 miles west of Omaha.

$81.86 PROFIT PER COW PER YEAR over a period of 7 YEARS is the average of A GRADE GUERNSEY HERD IN WISCONSIN

IT WAS THE GUERNSEY BULL THAT DID IT

Write for our free booklets about GUERNSEYS

THE AMERICAN GUERNSEY CATTLE CLUB
BOX PX PETERBORO, N. H.

LOMA ALTA STOCK FARM

offers for sale a carload of Choice Registered and High Grade Jersey Cows. No Cheap Stuff but every one a Money Maker. For particulars address

R. C. Robertson, Box 57E, R. F. D. No. 1, Trinidad, Colo.

Iowa State Live Stock Insurance Company

Home Office, Des Moines, Iowa

Colorado Office, No. 314 Tabor Opera House Building, Denver.

We write a blanket policy and also a special policy on registered stock.

AGENTS WANTED IN COLORADO

REGISTERED DAIRY BULLS

Holstein, Jersey and Guernsey. Bred by the Agricultural College. Most of the dams in the advanced registry.

Animal Husbandry Dept., Fort Collins, Colorado.

PERCHERONS—BELGIANS—SHIRES

Imported and home-grown 4 and 5 yr. old stallions, ton and heavier; 3 yr. olds, 2 yr. olds, yearlings. Produce of 62 Imported mares and noted prize-winning Imported sires weighing 2235 lbs. and 2430 lbs. each. Ton stallions at farmers' prices. Fred Chandler, R. 7, Chariton, Ia. Direct from Denver.

El Paso Herd Duroc Jerseys

Took more first premiums at Denver Stock Show with four under 6 mos. pigs than any competitor, on full herds. The reason is plain. Fall pigs sired by Illustrators Chief, the sire of champions in first litter.

J. W. BRAUER
22 Maple St. Colorado Springs, Colo.

DR. A. A. HERMANN Veterinarian,

Littleton, Colo., Phone 52W

Specialty, Diseases of Cattle.

New Blackleg Serum. Immunizes perfectly calves of any age by only one injection. Descriptive literature furnished.

WAIT!

The Fourth Annual

DISPERSION SALE

of

Percherons and Belgians

by

THE JAROSA RANCH

at

The Sale Pavilion, Longmont, Colorado

Monday, March 5

40 Head Mares
12 Head Stallions

All Colorado Acclimated Stock

Never before have we offered a more superior lot
Winners of 57 firsts and 8 Grand Champions in 1916

Our reputation for selling our stock to the highest bidder, without reserve and with as strong a guarantee as any breeder in the United States, should make this sale worthy of your time it will take to attend.

Send for Descriptive Catalog Today

THE JAROSA RANCH

HOWARD M. JAY, Owner

LONGMONT, COLORADO

Longmont has one of the finest sale pavilions west of the Mississippi River, and is reached by Burlington, Colorado & Southern and Great Western Railroads.

$2 Brings You This Big LIFE-TIME GUARANTEED NEW BUTTERFLY Cream Separator

Top of Milk Tank is Only 38 in. From the Floor

Skimming Device Made of Aluminum One-piece Easily Cleaned

On 30 Days' Trial At Our Risk

Then if pleased you can keep it and pay only a little each month out of your extra cream profits until the machine is paid for. In this way the separator itself will earn its own cost—and more before you pay. You won't feel the cost at all. If you do not need a large capacity machine you can obtain a smaller one on payments as low as

Only $2 a Month

No Interest to Pay—No Extras

The prices we quote include everything. You have no extras to pay—no interest. You buy direct from the manufacturer and save nearly half. We give ***30 days' trial*** on your own farm. During this time if you don't find the New Butterfly the lightest running, easiest cleaning and best all around separator on the market (regardless of price), you don't need to keep it. Just send it back at our expense and we will refund what you paid, including all freight charges both ways.

Used on More Than 100,000 Farms

Over 100,000 New Butterfly Cream Separators are now in use. No doubt some of them right in your own neighborhood. We have been advertising in this paper for years — the publishers know us and know we do just as we agree. Read these letters from just a few of thousands of satisfied owners:

Seven Years Old—Runs Like New

"The Butterfly Separator we purchased of you about seven years ago is still doing fine work. I recently took it apart and cleaned the gears with coal oil. Now it runs like a new machine and works as well as ever." H. S. Stonebraker, Kokomo, Indiana.

Twelve-Year-Old Girl Runs It

"We would not do without our Butterfly Separator or exchange it for all the other machines we have seen. Our little girl, 12 years old, runs it like a clock!" Mrs. P. E. Rude, Ashland, Wis.

Made $61.39 More from Same Cows

"We made $78.61 worth of butter before we had the machine and in the same length of time we made with the Butterfly Separator $140.00 worth of butter from the same number of cows." Thos. S. Kermosky, Point Aux Pius, Mich.

Lighter Running and Easier to Clean

"We don't see how we got along without the New Butterfly as long as we did. It runs lighter, is easier washed and kept clean than the higher priced machines in this neighborhood." R. E. Morrison, Ollie, Mont.

NEW BUTTERFLY CREAM SEPARATORS are the only ones having the patented one-piece aluminum skimming device, very easy to clean. Light-running vertical shafts, frictionless pivot, ball-bearings bathed in oil; low-down, self-draining milk tank; closed drip-proof and dust-proof bottom. Simplest and most sanitary machine on the market. Send for Catalog Folder.

(32)

ALBAUGH-DOVER CO.,
2129 Marshall Blvd., Chicago

Gentlemen:—Without obligation on my part, please mail me your **free** Catalog Folder and full particulars regarding your special easy payment offer on the New Butterfly Cream Separator.

I keep.....cows.

Name .....

P. O. .....

State.....*R.F.D.*.....

Fill Out Coupon and MAIL TODAY

Why not get one of these big labor-saving, money-making machines while you have the opportunity to do so on this liberal self-earning plan? Let us send you our big new illustrated Catalog Folder showing all the machines we make and quoting lowest factory prices and easy payment terms. We will also mail you a book of letters from owners telling how the New Butterfly is helping them to make as high as $100 a year extra profit from their cows. Sending coupon does not obligate you in any way. Write today.

ALBAUGH-DOVER CO.

Factories: 2129 Marshall Boulevard, CHICAGO, ILL.

Also Manufacturers of Albaugh-Dover "Square Turn" Farm Tractors—Write for Catalog

WESTERN Farm Life

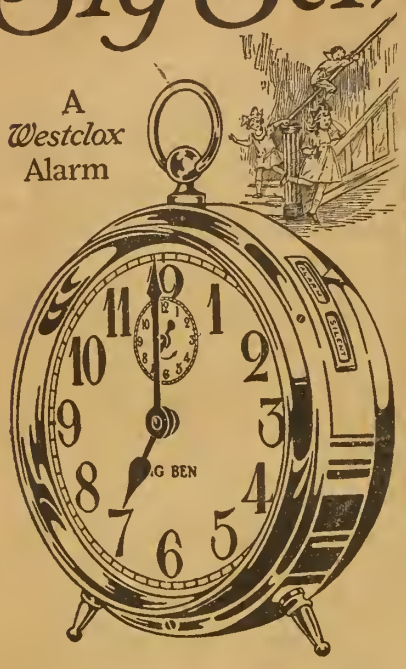
CONSOLIDATED RURAL SCHOOL AT LA PORTE, COLORADO

This is the type of educational institution that will solve the problem of keeping the young people on the farm. The vans carry pupils to and from school. This school takes the place of half a dozen inadequate district schools that were without modern equipment and in the hands of poorly paid and untrained teachers.

DENVER, COLORADO, MARCH 1, 1917

Big Ben

A *Westclox* Alarm



SEVEN A. M.—BIG BEN at his best—opening little folks' eyes—there's a race to hush him—a pillow battle—merry laughter—and mother to tidy the kiddies for school.

For the rising generation there's no better get-up. Big Ben's little men bubble health and cheer, and they feel as big as Daddy with a clock all their own.

He gets 'em to school long before the last gong and this habit lingers when the children grow up.

You'll like Big Ben face to face. He's seven inches tall, spunky, neighborly—downright good.

At your jeweler's, $2.50 in the United States, $3.50 in Canada. Sent prepaid on receipt of price if your jeweler doesn't stock him.

Western Clock Co.

La Salle, Ill., U. S. A. Makers of *Westclox*

Other Westclox: Baby Ben, Pocket Ben, Bingo America, Sleep-Meter, Lookout and Ironclad

District Bank Organized

The organization of the Federal Farm Loan district bank serving Colorado, New Mexico, Kansas and Oklahoma, is announced from Washington as follows: Dan F. Callahan, Kingman, Kan., president; Miles Lasseter, Oklahoma City, vice-president; T. J. Guilfoil, Albuquerque, N. M., secretary; Ralph Voorhees, Denver, treasurer; Thomas A. Hubbard, Rome, Kan., director; W. P. Z. German, Muskogee, Okla., registrar and attorney.

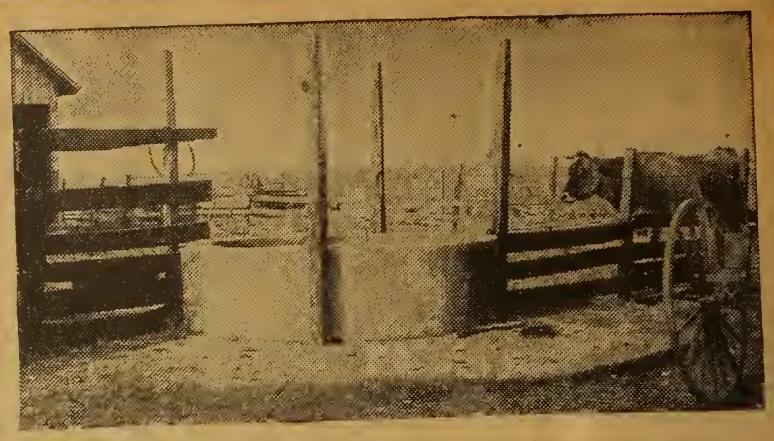
Mr. Voorhees, the Colorado member, is a former state senator who has been engaged in the real estate business in Denver. Up to the time of going to press the appointment of appraisers had not been announced.

Beware of Organizers

Washington,. D.. C.—The. Federal Farm Loan Board has issued a warning to the farmers of the United States to beware of organizers who are attempting to make private profits in the application of the Farm Loan Act. Attention of the board has been called to the fact that in many parts of the country the organization of farm loan associations is being inspired by the desire of certain individuals to create jobs for themselves.

The Farm Loan Act provides for the payment of a small salary to the secretary-treasurer of each farm loan association, and it also permits the payment of fees to members of the appraisal committee of each farm loan association, subject to the approval of the Federal Farm Loan board. Each borrower under the Farm Loan Act is required to provide an abstract of title, and the board has advised that farmers constituting an association join together, as individuals, in getting one attorney or abstractor to prepare these abstracts co-operatively so as to reduce the expense to a minimum. Complaints are now being made that certain individuals are organizing farm loan associations to get themselves elected secretary-treasurer at excessive salaries; that borrowers are being unnecessarily taxed for the payment of the appraisal committee and that in some instances attorneys and abstractors are using the system with a view of creating business for themselves.

The Farm Loan board is urging farmers to organize small units where practically all of the work can be done gratis by members of the association and thus maintain the purely co-operative character of this farm loan system. It warns that any association which gives evidence of having been organized for purposes of private profit will be given very careful scrutiny before a charter is granted.



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A concrete stock tank keeps the water sweet and cool. A concrete floor surrounding it does away with the muddy bog where the stock must stand and drink. The stock tank and the floor are simple and inexpensive to build.

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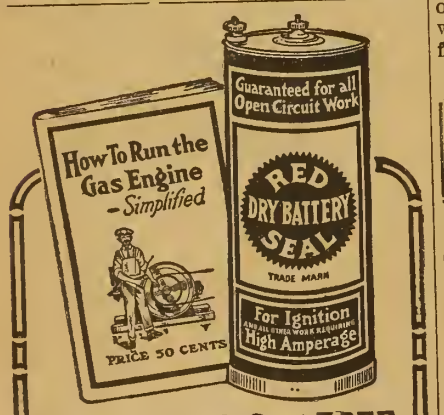

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Farm Tenancy Is Disastrous to Rural Progress

WARNING APPLIES TO IRRIGATED SECTIONS OF THE WEST

W. M. JARDINE

Dean of Agriculture, Kansas State Agricultural College

LAND values in America have risen 100 per cent or more in the past two decades, due to the fact that the land most suitable for farming has been taken up, while the government no longer possesses really valuable farming lands open to settlement. Farming during the same period has been profitable to those who have operated according to approved methods and nearly all of these farmers have been able to retire from active work after ten to twenty years of farm practice. Land exploitation and rising land values have developed fortunes for others without occasioning the actual tillage of the soil by the owners. These forces have produced the absentee landlord. The most capable farmers in the last 20 years have retired to the city, there to enjoy superior educational and social advantages for themselves and their families, and have turned their farms over to the management of tenants.

With the advent of the absentee landlord and the tenant-farmer has come a disintegration of the hearty and cheerful community life of the early days. The social and community activities of the country people compare even less favorably with those of city dwellers than they did a few decades ago. Many rural communities have lost their social coherence. The country church does not afford adequate satisfaction, and social life is barren and often unwholesome.

Supports Half the People

The farm produces 81 per cent of the raw material for feeding and clothing the American population. It supports almost half of her citizens, and nearly half of the children of the United States are born and reared in rural districts. How can the lives of the land-owning farmer's family be made less solitary, fuller of opportunity, freer from drudgery, more comfortable, happier, and more attractive, so that the natural increase in country population will be content to become farm owners and to live the farmer's life? Simply to make farming more profitable will not accomplish this end, for statistics clearly show that the movement of population from the farm to the city is largest in those agricultural sections enjoying the greatest prosperity. While it is absolutely necessary that the business of farming be made more profitable, there must come hand-in-hand with this improvement, equal opportunities for social enjoyment and satisfaction, in order to keep prosperous farmers upon the land. * * * This problem does not concern farmers alone, but the whole nation.

Tenancy a Vital Problem

Early Americans did not intend that their nation should ever have a tenant class. The assumption on which the national ideals were built was that Americans should be a land-owning people. If the United States is to establish and maintain a permanent leadership, it is of vital importance that these earlier ideals be maintained. But today a tenant problem as difficult as any in the world confronts this country. At the present time over 40 per cent of the farms in the United States; 36 per cent of the farms of Kansas, and 20 per cent of the Colorado farms are operated by tenants and the percentage is annually increasing. In some states 70 per cent or more of the farms are thus handled. The absentee landlord has come to form a characteristic part of the life of our towns and cities, and his influence upon municipal activities is such that journalists, publicists, and others have expressed well-defined views as to the retired farmer's place and influence.

The people who have moved to the cities are the very ones that should be induced to stay in the country because usually they are the ones that have succeeded. When they leave the country they have just reached the stage of development where they can be of greater service to country people. Their prosperity has given them leisure to devote to community problems. They could be the real leaders and could do a tremendous amount of good in building up rural institutions such as the country church, the country school, and good roads, and creating an interest in beautiful landscapes—by organizing co-operative associations for selling and buying, and by getting country people to work together through their leadership. Instead, pers ns of such potentialities move to the city where many of them are misfits and where they are constantly at cross purposes with those city-born and city-bred.

Check Cityward Movement

Something must be done to check this city-ward movement. Such men must be kept on the land as leaders in the biggest business in which Uncle Sam is engaged—agriculture. Because tenants are not landowners and are more or less migratory, they are not interested in the protection of the natural soil fertility out of which future generations must be fed, nor do they desire to invest in good schools, churches, roads, or any movement for rural uplift because of their indefinite tenure. Just as long as national agriculture is dominated by such a class, one cannot expect to reduce the cost of living, nor to keep it from soaring to still greater heights. Under such circumstances efficiency of agricultural production will retrograde rather than progress. * * *

It is the belief of those who have studied this question most closely that the only way by which an ideal country life condition can be reached is through education. As effective an education must be provided for the children of the country as is now available for city children, and to make this possible the co-operation of city folk as well as those of the country will be required.

The Need of Leadership

To effect this result leaders are needed, broadly trained men and women who are willing to devote their lives to this work. The school is the institution through which they will be able to render the most effective service. Because of its democratic nature and its public support, it represents the whole community. The church, too frequently, represents only its members, and the Grange or other farmers' club, its own patrons. The school, however, is of vital concern to every individual in a neighborhood. Thruout the years, the rural schoolhouse has been the emblem of America's pioneer civilization. Yet rural education has lived up to its opportunities in only a few rare instances, and the little-progressive rural education found in this country can be stimulated by a system, for example, like that of Denmark's, which country, in the last 50 years, has accomplished the greatest rural uplift the world has ever known. * * *

The schools in the rural communities, with but few scattering exceptions, do not prepare their children for life today as well as they did 40 years ago. During this time many expedients copied from city school systems have been tried to improve their general plane of efficiency. But in spite of all, the general trend of rural school efficiency has been downward. Local ambition and short sightedness have brought about division of districts until limited tax areas can no longer support strong teachers. While the rural teacher of a half century ago was devoted to the interests of rural life and was, comparatively speaking, the scholar and leader in the community.

No Interest in Rural Life

Today more than 80 per cent of the rural teachers in the United States are women; a large majority of them without any deep-seated interest in rural conditions, or aspirations, or ability in rural leadership. Their tenure of service in one community is too brief to make any real contribution to the general uplift and they receive an average annual salary scarcely above $300. This is $100 to $150 less than the average laboring man in this country receives, and $500 less than the average rural teacher in the schools of Denmark. Fifty-eight and one-fourth per cent of the children in the public schools of the United States today are being educated in one-teacher schools. Only a minority of these children will ever have more than a rural school education.

The situation is somewhat improved in a few consolidated schools and rural or county high schools, yet, altogether, the rural children do not receive their early and most important education from well-trained rural leaders. The great field of rural leadership in pedagogical lines is practically unoccupied, and the suggestions, influence, and teaching gripping the boys and girls even in the open country is that the things worth while are city amusements, city occupations, city lives, and city ideals. Physically, mentally, and morally, city school children are better cared for than the children in the rural districts.

Rural School the Solution

Undoubtedly the most potent and far-reaching factor in the solution of the rural problem must be the rural school. Its proper redirection and revitalization will require those devoted rural leaders as teachers through whom the entire spirit of country life may be changed. Denmark furnished the best illustration the world has ever known of what can be done for rural life by proper education. In 1864 Denmark was as dependent and bankrupt a nation as could be found in the Occidental world. Necessity set her at work to redeem herself. Some of her best leaders, notably Bishop Grundtvig, famed as the originator and organizer of her present folk high schools, determined to begin at the bottom and build up the nation thru her schools. Slowly they were formulated and popularized and became a power in promoting the prosperity of the nation. Today her small farmers, formerly the low and oppressed class, have become the controlling power of the state, and for a wholesome, beautiful, happy, prosperous country life, Denmark sets the example for the world. Her schools that have been developed in the last half century receive practically the entire credit. Her rural schools, folk high schools, agricultural schools, and schools of home economics are famous in every civilized nation for adaptability to local needs, efficiency, and rural leadership.

Have Permanent Appointments

These teachers, three-fourths of whom are men, are from 30 to 70 years of age, are given permanent appointments, but only after thorough professional training and a reasonable and satisfactory period of service as assistant and substitute teachers. Their annual salary, conservatively evaluated according to the purchasing power of our dollar, varies from $900 to $1,800. A score or more years of tenure in one community is the rule. These teachers rank high socially and in general, are community leaders and organizers. They are furnished comfortable homes, with fuel and land for garden, and are made real members of the communities in which they work. They are influential factors in the entire community life. * * *

When our rural education shall be as properly and adequately reorganized, redirected and adapted to our local conditions and needs as is Denmarks; when our rural schools serve the entire rural community and are interested in and leaders of every vital interest of the community; when these schools furnish as adequate and equivalent educational opportunities to country boys and girls as city schools do to the boys and girls of our industrial centers; when these teachers as rural leaders shall foster co-operation and suitable social, cultural, economic, and religious organizations, and shall be instrumental in securing the proper assistance and service of higher educational institutions, then; and not till then, will a most powerful means of permanent rural growth be instituted. And rural decline means national decline. Rural progress means national progress.

(Address delivered before students of Colorado Agriculturale college.)

Enlargements of Wind Galls

I have a valuable horse that has an enlargement on one leg and a wind gall on another. What shoud I use on them?—F. R. K., Idaho.

A great absorbent for enlargements on horses' legs, such as bowed tendons, bog spavin, bucked shins, curbs, windgalls, etc:

Acetic acid, 1 pint; sal-ammoniac, 1 ounce; tincture asafoetida, 1 ounce; sugar of lead, ½ ounce; tincture of iron, ½ ounce. Mix, stand in container until needed, put 2 ounces of the above in a quart bottle and fill with water. Apply as often as you like. Shake well before using. Do not use on open sores

Consolidated Schools Solve the Rural Life Problem

COLORADO TRIES TO COUNTERACT CITYWARD MOVEMENT

C. G. SARGENT
Department of Education, Colorado Agricultural College

20 Consolidations have been formed since 1912.
52 Old district organizations have been abolished.
48 Old style and out-of-date buildings have been abandoned.
108 Teachers are now employed in consolidated schools.

ENROLLMENT

2763 in grades 1-8.
HIGH SCHOOL
203 Freshmen
126 Sophomores
73 Juniors
35 Seniors

437 Enrolled in consolidated high schools.
3202 children are enrolled in consolidated schools.
6 have four-year high schools. The others soon will have.
3 of these schools are accredited.
50 country boys and girls have already graduated from three of these high schools.

LET us briefly analyze the items given above. While we have been bringing about twenty consolidations in Colorado, the states of Iowa, Missouri, Minnesota, Idaho and Washington have effected more than five times that number, and North Dakota more than ten times as many. Indiana leads all other states with 700 consolidated schools. North Dakota comes second with more than 400 and leads all other states in the rapidity with which consolidation has taken place.

Fifty-two old district systems have been abolished and are replaced by twenty modern and efficient school systems. By way of comparison we might say that in number of districts consolidated and children affected, this is equal to the consolidation of the fifty-one third class districts in El Paso county with their school census of 3,000 children; or to Adams and Alamosa counties combined, with their fifty-two third class districts with a school census of 3,000.

When viewed in this light, it is no small achievement, even though it is only a small fraction of what other states have accomplished in the same length of time.

Forty-eight old-style and antiquated buildings have been abandoned and have been replaced by the best and most modern rural school buildings to be found anywhere in the state. If the forty-eight old buildings and the new ones that have replaced them could be viewed by the people who read this article, they would constitute 'Exhibit A' in the history of rural school improvement up to the present time.

100 Per Cent Better Service

One hundred and eight teachers are now teaching in consolidated schools. Some of these are the same ones who taught in the old schools. But they now have a chance to give 100 per cent better service than before, because they have better buildings, better equipment, only one-fourth to one-eighth as many recitations to hear as before, and from four to eight times as much time for hearing a recitation. And besides this, both grade and high school teachers now have the assistance of trained and experienced principals or superintendents. The tendency in all these schools is to employ teachers with training and experience equal to that of teachers employed for similar work in city schools.

These schools deserve to be called "graded" schools. While only six of the twenty have yet built up a four-year high school, none, when fully organized, will offer less than two years of high school work and most of them will offer four. To give an opportunity for high school education to country children who did not have it before, was one of the chief reasons for consolidation. 3,202 children are now enrolled in consolidated schools. This is equal to 3 per cent of the enrollment in all third-class districts in the state. The enrollment of the census and the average daily attendance of those enrolled in these schools are much higher than they ever were in the old ones, or are now in the unconsolidated and rural schools around them. The higher elementary grades are growing larger from year to year, while nearly all of those who graduate from the eighth grade go right on into high school. Two examples to prove this may be cited of open country consolidated schools. One of these graduated a class of 23 from the eighth grade, the other 24. In the first case all 23 entered their own high school the following year. In the second case 23 of the 24 did the same.

Ten Consolidations Last Year

Ten, or one-half of these consolidations, were effected in the calendar year 1916. Five of these are not yet completely organized, and these five have not yet been able to offer any high school work. Still 437 children are now enrolled in consolidated high schools. Probably not one-fourth of these would now be in high school had these schools not been organized.

Let us now look at the work done by the first ten consolidated schools that were organized. The number of teachers varies from four to nine. In almost every case a graded school has replaced schools that were almost, if not wholly, ungraded. In points of efficiency there is scarcely any basis for comparison between the new schools and the old ones. The nine subjects in our elementary course of study are taught much more efficiently and effectively than they were in the old schools. When it comes to the course of study in the high school there is a tendency in all of them to give proper emphasis to the great fundamental subjects of country life, namely: Agriculture, home economics and manual work. Still the chief difference between our best consolidated schools and our city schools is not so much in the subjects taught as in the viewpoint from which they are taught. City schools naturally stress city life, city conditions, draw their illustrations from the business transactions of city occupations and interpret life in the terms of urban environment.

Our most successful consolidated schools apply the same principles to the country districts that surround them. The course of study is taught from the country viewpoint, and the winds, the rain, the snow, the flowers, the birds, the livestock, the garden, farm crops and farming operations furnish illustrative materials for study and comparison in these schools in the same manner that business methods, banking, manufacturing, transportation and the professions are both consciously and unconsciously emphasized in city life and in city schools.

Agriculture is Not Neglected

In such a scheme agriculture cannot be overlooked. And we find classes in seed-testing, milk-testing, crop-judging, farm management, insects and their control, rotation of crops, fertilizers, etc. Such studies find their natural fruition in agricultural clubs and in many instances father has discovered in his boys a hitherto unheard of interest in farm crops, the livestock and farming operations in general. If these symptoms of interest on the part of the boys are properly understood and encouraged in a suitable way, these fathers will find their sons raising an acre of corn or potatoes, on ground allotted them, or see them taking care of a flock of chickens, a calf, or a pig with an air of ownership equal to that of the proprietor himself, and at the same time along with this new interest in their own new possessions will be noticed a greater interest in father's crops, livestock and farm problems.

In these same schools the girls are taught the simple but fundamental arts of home-making and housekeeping. Cooking, serving meals, canning and preserving fruits and vegetables, mending, repairing and caring for clothing, selecting materials and making their own garments are studied that are fundamental to intelligent housekeeping and successful home making, and these are taught in some of these schools by thoroughly trained and successful teachers.

Country girls in these schools are now serving noon-day lunches. The work is conducted on a strictly cash basis and these country girls are learning some of life's large problems under intelligent and competent direction. The value of this work is reflected in the personal appearance of the girls themselves, in the care of their clothes and their behavior, and they take a greater interest in mother's problems at home. The care, repair and making of their own clothes saves work for mother and money for father. The new dishes they have learned to make in class at school are sometimes tried out in the kitchen and often mother is relieved of getting a meal. Granting that at times it may be a little hard on the rest of the family to eat and try to digest some of the results of this amateur and experimental work, still it is even better to have it occur within the family circle, where "charity covereth a multiude" of mistakes, than to have these young ladies, a few years later, try out some experiments on a brand-new husband who has not yet been weaned away from the biscuits that "mother used to make."

Instead of these lines of work taking all the time from the traditional high school subjects still required for college entrance, let it be said that the graduates from these country high schools are in good standing and are welcomed in the universities and colleges of the state. Half of the four-year consolidated high schools are already accredited, which is a more rapid recognition than was accorded most of our city schools within five years after their organization.

Have Modern Equipment

These schools are successful because they have modern buildings and adequate equipment; they have teachers who are well trained and experienced; the work is divided up between several teachers and so classified and systematized that the teachers can do their best work and the children have opportunity to master their lessons. The number of classes has been reduced per teacher, while the number in each class has been increased, both adding to the efficiency of the work. Consolidation combines from two to five districts and transportation makes it possible and easy for children from the most remote parts of the larger districts to reach the central school regularly and on time.

Consolidation is as successful in Colorado as in any other state. Wagon transportation is very satisfactory today in many parts of the state where the first child who enters the wagon in the morning rides seven miles to reach the school. One large consolidated school owns and operates two large auto vans which will carry thirty-eight children each, some of whom ride eleven miles each way. Another district comprises a congressional township and uses three auto trucks with complete

These Are the Small Rural Schools Abandoned When the Consolidated School, Shown on the Cover Page, Was Finished

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Seedbed Preparation for Dry Farm Spring Crops

DEEP PLOWING AND THIN PLANTING ARE TWO ESSENTIALS

E. R. PARSONS

IN ANY farming the yield of all crops depends largely on the kind of seed-bed they are planted in. Depth and moisture are the essentials and a properly prepared winter fallow provides them. When we plow in the fall and leave the soil in a rough condition all winter to catch the snow and absorb moisture it is called winter fallow. As soon as the frost is out of the ground in the spring the ground is mulched by leveling off with the disk or harrow, or both, as needed.

This winter fallow provides the best seed-bed for all spring crops but late crops such as corn, sorghums, Sudan grass, etc., may be also profitably raised by the spring fallow. By the spring fallow is meant the preparation of the soil as soon as possible after the frost is out of the ground and then alternate disking and harrowing to kill all weed growth until planting time in May or June. The plowing for any crop in either of these fallows should never be less than ten inches deep if the best results are desired.

There are many in Western Kansas and Nebraska who claim that deep plowing is not necessary for wheat and small grain; but in comparing notes after a partially dry season such as 1916 we find that all the good crops fell to the deep plowers. Western Kansas, Nebraska and Oklahoma farmers who enjoy a precipitation of 18 to 23 inches are not in the same class with those of Colorado, Wyoming, New Mexico, Utah, etc., who are happy if they get their 14 or 15 and it is possible in the former states to get along with a little less plowing than in the latter; but in all the states we find the highest averages following the deepest plowing.

Plant On the Fallow

Immediate planting after plowing deep or even shallow is often a cause of failure in dry farming, and is something we never recommend. Every crop should be planted on one of the fallows—the summer fallow, the winter fallow or the spring fallow—to do otherwise in the arid districts is gambling with nature. By good deep plowing in the fall from two to four feet of moist soil may often be secured in the winter fallow for spring planting. This will usually carry from 15 to 17% of water or over two inches to the foot and will be sufficient to carry the crop with anything like the normal precipitation or loss during the growing season.

The winter fallow is particularly valuable for small grain crops and flax. These do the best in deep, well compacted seedbeds, and it is found that the settling of the soil during the winter months provides the very best conditions. Last year as high as 75 bushels of oats per acre were raised on land plowed 12 inches in the fall; but the average yield on spring plowed 6 to 7-inch land was less than 10 bushels.

Root Penetration of the Corn Plant on Well Prepared Seedbed

The rule for planting small grain in the spring is to procure the hardiest varieties and plant as early as possible; but in New Mexico and south of Colorado generally, the planting is sometimes delayed for the rains in the early part of summer.

Thin Planting Is Important

In dry farming thin planting is as important as deep plowing, for both provide more soil and consequently more moisture for the individual plant, but when these are crowded, and there is not enough moisture to go round, the crop is naturally stunted.

More seed of course can be planted on deep plowing than on shallow—there is more moisture and more plant food, and rich soil will support more than poor land. Therefore, the farmer who understands his land is, after all, the best judge of the right amount of seed to plant, but an average for the following varieties under a precipitation of 15 inches would be about as follows: Wheat, 35 pounds; barley, 35 to 40; oats, 35; rye, 35; emmer, 40; flax, 20; alfalfa, 10 and 20; brome grass, 15; field peas, 20.

When alfalfa is planted in rows and the best seed is used 5 pounds is sufficient for an acre. For drilling, about 10 and broadcasting 15 to 20. Some recommend less than this but there are always some hard seeds and others which do not germinate and in the ordinary commercial variety seldom more than a half or two-thirds produce plants.

On ordinary dry farm soil, upland or lowland, alfalfa will grow like a weed on the deep plowed winter fallow, planted from about April 20th to May 15th. Spring planting has been more successful than late or fall planting in all regions where the rains come early. For dry uplands the row system with plenty of cultivation is the best. In favorable seasons a good stand may often be secured on the spring fallow . There is no objection to planting this crop on the new break but the surface must be worked continuously until reduced to as fine a texture as old land. If the chunks of sod cannot be eliminated, it is better to use it for some other crop, for alfalfa more than anything else needs a mellow seed bed.

Chain Drag for Packing

For packing the seed rows a chain drag is better than wheel pressure, and the planting should be done when there is no danger of the soil running together and later forming a crust. Drouth alone seldom if ever kills out established alfalfa, but when accompanied by exceedingly low temperatures in winter it may thin out or partially destroy a stand. Too much water which may form ice in a field is also injurious. The most hardy varieties are the Baltic, the Grimm and those from North Germany.

The potato is a good dry farm cash crop in regions where the soil is right. To obtain the best results the land must be plowed as deeply as possible. There is an important reason for this—the potato seldom sends its root into the subsoil like other crops; but subsists almost entirely on nourishment derived from the seed bed. The finest potatoes in Europe are raised in the island of Jersey, the home of the Jersey cow. A common yield there is 600 to 800 bushels per acre. They plow 20 inches deep and fertilize with kelp, a variety of seaweed which abounds in that neighborhood. Some of our most successful potato raisers in the West plow twice, once in the fall and again in the spring. Thin planting and intensive cultivation without any hilling up is also necessary. Good yields are often obtained on sod when the plowing has been deep and the soil reduced to a fine mellow seedbed.

The seed potatoes or pieces are usually planted four inches deep about two feet apart in the rows, which are spaced about the same width as corn. One of the best crops raised on a dry farm was planted on the winter fallow the year following the breaking and went 250 bushels to the acre. The land was plowed 10 inches deep.

Canada peas are often a good crop, especially when the season is unusually cool, and should always be planted early, for when the high temperature of summer commences they invariably cease growing. Cow peas are really beans, will not stand frost, and will grow where the temperature is too high for Canada peas.

Spring grain crops as well as winter wheat may often be cultivated to advantage with the harrow. There is often a dry spell between the spring rains and the summer showers and it is a decided benefit to all crops to be well mulched at this period. Some farmers are afraid to harrow their crops; but it has been done in other lands for hundreds of years, also the rolling of winter wheat is very preva-

Continued on Page 13

First Prize Winners in Colorado Club Contests

BOYS AND GIRLS ATTENDED THE STATE FARMERS' CONGRESS

These are the Colorado boys and girls that won first prizes in club work and were rewarded with a trip to the Farmers' Congress at Fort Collins. Nothing that occurred during the busy congress week created quite as much of a stir in the hearts of the farmers as the appearance of these young people in the college auditorium. They were lined up in front of a large assemblage of men and women and asked to tell their stories. There was little previous notice of the meeting and the boys and girls had no time to prepare speeches.

"Just tell them how you did it," was the advice they got from State Club Leader Vaplon. And the stories came right from the heart, in boy and girl language that every farmer could understand. I made some of the old fellows sit up. It made them think about their own lost opportunities in childhood and they resolved, then and there, that their own boys and girls would have all the chance in the world to take part in club work; that they would send them to the School of Agriculture, or to the College, if they possibly could, so that they might learn all about the business of farming and not grope in the dark. This is the way Ed Mangas of the El Paso County Potato club, told his story:

"I used an old alfalfa field. The alfalfa had died out and the field grew up to clover and I disked and cross-harrowed it and prepared a good seed-bed. I treated my seed with formaldehyde and afterward sprayed the plants with blue vitriol and lime for blight. I got 1,500 pounds of potatoes from an eighth of an acre. The variety was the Early Ohio. My folks took so much interest in the work that they decided to send me to the School of Agriculture, and my father has begun to grow potatoes. Before I took up the club work three years ago he wouldn't have a potato on the ranch. He said you couldn't raise them here. Now we all know different."

James Atkins of Calhan, told how he grew 48 bushels of corn an acre by dry farming methods at an altitude of 6,500 feet, in spite of a 60-day summer drouth. A Fort Morgan boy told how the cow-testing club formed there had started a lot of farmers to keeping records on their cows, to determine whether they were paying for their feed.

The stories were short and to the point. Each was an eloquent testimony to the practical value of the work done among the young people in corn growing, potatoes, poultry and pig production and gardening. After a busy week at Fort Collins the young people, chaperoned by State Leader Vaplon and his assistant, Miss Maude E. Sheridan, came to Denver for a day's visit at the stock show. They enjoyed every minute of the trip, which was a splendid reward for their season's work.

Colorado Boys' and Girls' Club Winners Who Attended Farmers' Con gress. Reading from Left to Right: Edward Mangas, Leland Barnes, Jessie Morrow, Roy Hockeday, Constance Grant, Warren Leonard, Opal Jessup, Edward Drew, Floyd Sammon.

There were twelve winners at the congress, but not all of them got into the

Con'td on Page 28

Growers Must Improve Methods

SUMMING UP POTATO LESSONS FROM EASTERN TRIP

W. R. McCLELLAN

ARTICLE IV.

REGARDING sowing timothy with our alfalfa seed, I think it will no doubt do well here and not only increase our yield but where we can irrigate in September it will allow the timothy to grow and make a fine fall feed and no doubt enable us to turn our cows in on alfalfa much earlier in the fall and not cause bloat. I saw cattle feeding on it in New York in October. I intend seeding 75 acres this spring with grain and use 9 pounds alfalfa and 4 or 5 pounds of timothy. Clover winter kills too much here. L. D. Sweet tells me he has done this for two years and it works fine.

Regarding the potato situation my trip and investigation East has satisfied me that the Colorado grower who adopts the up-to-date methods in use in the East has nothing to fear. But there is no doubt that Prof. Stuart is right in the statement made when here last September, viz.: "You potato growers of northern Colorado are ten years behind the other potato growing states and when there comes, as there will in a few years, a normal crop all over and potatoes are cheap and plenty you will have a crop you cannot sell and a large part of it will be dumped. You must take more pains in growing your seed. Plant not over 12 inches apart in the row and plant only good ground."

I thought that a rather strong statement at the time, but am now convinced that he is right. I would rather grow potatoes in Colorado than any state I visited. We do not have so many diseases nor so many obstacles to contend with and I fully believe, with certified or strong seed as is now being used in the East, we can raise as high yields even as Maine and a quality that cannot be excelled by any, and grow the crop fully as cheap. We are at least 250 miles nearer the great southern market than Wisconsin and Minnesota and with water at our command our outlook is better than any. But I do feel that the same advice as given to the county agents of Wisconsin applies with equal force here, viz.: Plant only good ground. Get the purest and most vigorous seed. Break alfalfa and if possible add 15 to 18 tons of manure. Take especial care to prepare the ground. Plant as in Maine and all over the East, 12 inches in the row, and our success is assured.

Cause of the Blight

The blight will not likely come again in 20 or 30 years. All the experts now admit it is caused by climatic conditions and several of the colleges have produced it by heat and spraying, with water and sun. The writer saw it in Maine when 12 years old and again in Greeley in 1880 and also in 1911 and 1912. In each case the conditions were identical—very dry fall, very little snow during the winter, dry spring with warm, dry winds in June, light showers in July and very hot weather. This will produce blight in any country and it affects the seed or soil for a year or two unless you have a very wet season following. All the experts now admit it. Yet in the spring 1913 when Dr. Edson and a noted German pathologist were here, I voiced that idea and they did not agree with me but believed it was a fungus disease. But when I was in Washington, Dr. Edson came up and greeted me and said, "I haven't seen you Mr. McClellan since we had that talk about blight in Greeley." I said, "Who do you think was right?" He said, "You were. We know now that your theory was correct."

I know several growers here who raised big crops right thru the two blight years by irrigating their ground before plowing, right after planting and keeping it up, and had we all done that we would have had no blight. But most of us were too short of water.

Now, why I took up pure seed growing. Dr. Stuart of the Bureau of Plant Industry at Washington has for three years been urging me to go into it, as he said some one ought to go into it as such a seed potato farm is badly needed in Northern Colorado and that he knew no one better fitted to start it than I. But my two farms were both rather too heavy for such work. I tried to get several of our best growers interested, but could not. They had not looked into it and thot it required a lot of work at a very busy time, and the yield would not be as large as for market, and the farmers would not pay enough for seed to make it pay. So I sold my heavy land and bought 360 acres of the best potato land I know of five miles west of Greeley, one and a quarter miles south of Farmer's Spur. I got the best seed I could find in the East without regard to price. I intend to try five or six acres of Deans for market. Also five acres of Bliss Triumph and likely one acre of Peerless. This will be on alfalfa without manure, just to show what the Dean Rural will do. These will be planted 12 inches in the row, rows 3 feet apart, as is the custom all over the East. Then I will have 20 acres of Dean Rural 10 inches in row for seed, 10 of Bliss and 10 of Peerless. Dean says he has made no gain in yield for the last three years and 450 bushels, he thinks, is his limit, but is making gains in quality and shape. He thinks if he could add manure he could easily get 500 bushels, but is too far to ship in and hay too high to feed, but he is confident I can bring them up to 500 bushels with our alfalfa and sheep manure. By 1918, after they have become acclimated, I will add manure to the alfalfa and try for the 500 bushels, or as much as I can get.

I intend picking out of this car 3,000 pounds of the best shape for a seed plot the same as Dean has done, and from them pick hills that come up to my ideal for a seed plot the next year, as Dean has been doing for 12 years.

Dean, Cleveland, Dr. Stuart and the College at Wisconsin are all much interested in this work and have requested me to let them know several times how the crop is doing during the growing season.

Government Trying Them

The U. S. Government Experiment Station here is also trying 5 bushels of the Dean Stock to experiment with. Several of our best growers are trying one thousand pounds each of Dean

Continued on Page 23

Eureka Potato Planter

For Large or Small Growers, 1 or 2 rows

Opens furrow, drops seed any distance or depth required, puts on fertilizer (if wanted), covers up, marks next row. Accurate, automatic and dependable. Operated by one man. Furrow is opened directly under axle and seed is dropped in plain sight of operator. Made of steel and malleable iron, assuring long life and few repairs.

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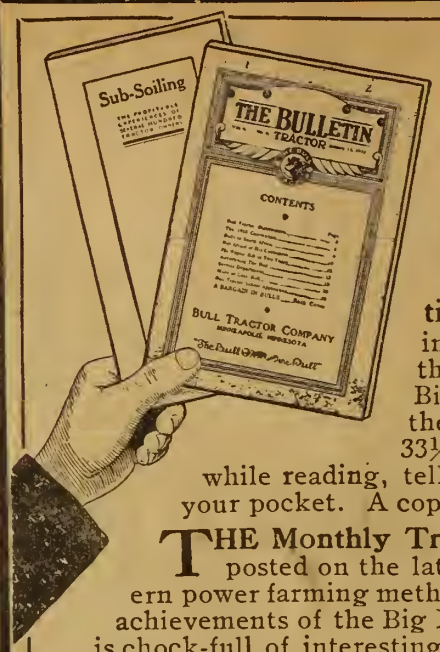

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is the most popular tractor in the world today—because of its many unique features—the subsoiling feature of the long spade lugs on the drive wheel which runs in the bottom of the furrow ("the best way of subsoiling known up to the present time," uses no extra power and charges nothing for its work) its low fuel and upkeep cost—its ability to work fast and continuously for many hours, day and night, without overheating, its self-steering device, its simplicity, accessibility and sturdiness.

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Enlightening Figures on Potatoes

A good deal has been said and written about the high price of potatoes without exact knowledge regarding the conditions that are the cause of the high figure. For this reason the following enlightening statement, from Lou D. Sweet of Denver, who is president of the National Potato Growers' association, as well as of the Colorado association, will be of interest:

The final estimate of the government on Colorado's crop of potatoes fixes it at 6,900,000 bushels. Deducting from this 1,000,000 bushels for seed, waste, shrinkage and culls, leaves 5,900,000 bushels for marketing. (This allows for planting purposes 666,600 bushels at the rate of 800 pounds of seed per acre on a government estimate of 50,000 acres, consequently the deduction of one million bushels for seed, culls, etc., is conservative.)

The total shipments of market potatoes are given at 10,500 cars, figured on an average of 550 bushels, or 33,000 pounds per car.

Reports from the railroads up to Feb. 1st indicate about 9,500 cars shipped out, leaving Colorado virtually 1,000 cars for home needs.

Mr. Sweet estimates, perhaps too conservatively, that Colorado uses eight carloads a day. This is based on consumption at the five leading retail markets, Denver, Colorado Springs, Pueblo, Cripple Creek and Boulder. Accepting this figure, which would be the absolute minimum, the thousand cars would just about last until June 15th, when the first new crop for general consumption would reach us from California or Texas. This is going on the assumption that no more potatoes would leave the state.

It is apparent from a consideration of these figures that prices are governed by shortage of supply, which is general the country over. The seed situation for the next planting is decidedly serious. Prices have been so high that the grower has been tempted to sell off everything. Good seed potatoes are commanding a figure that indicates a possible profit only to the grower who follows the best methods on ideal potato ground. There is considerable speculation as to just what the result will be regarding the 1917 acreage.

Swift Paid Out $300,000,000

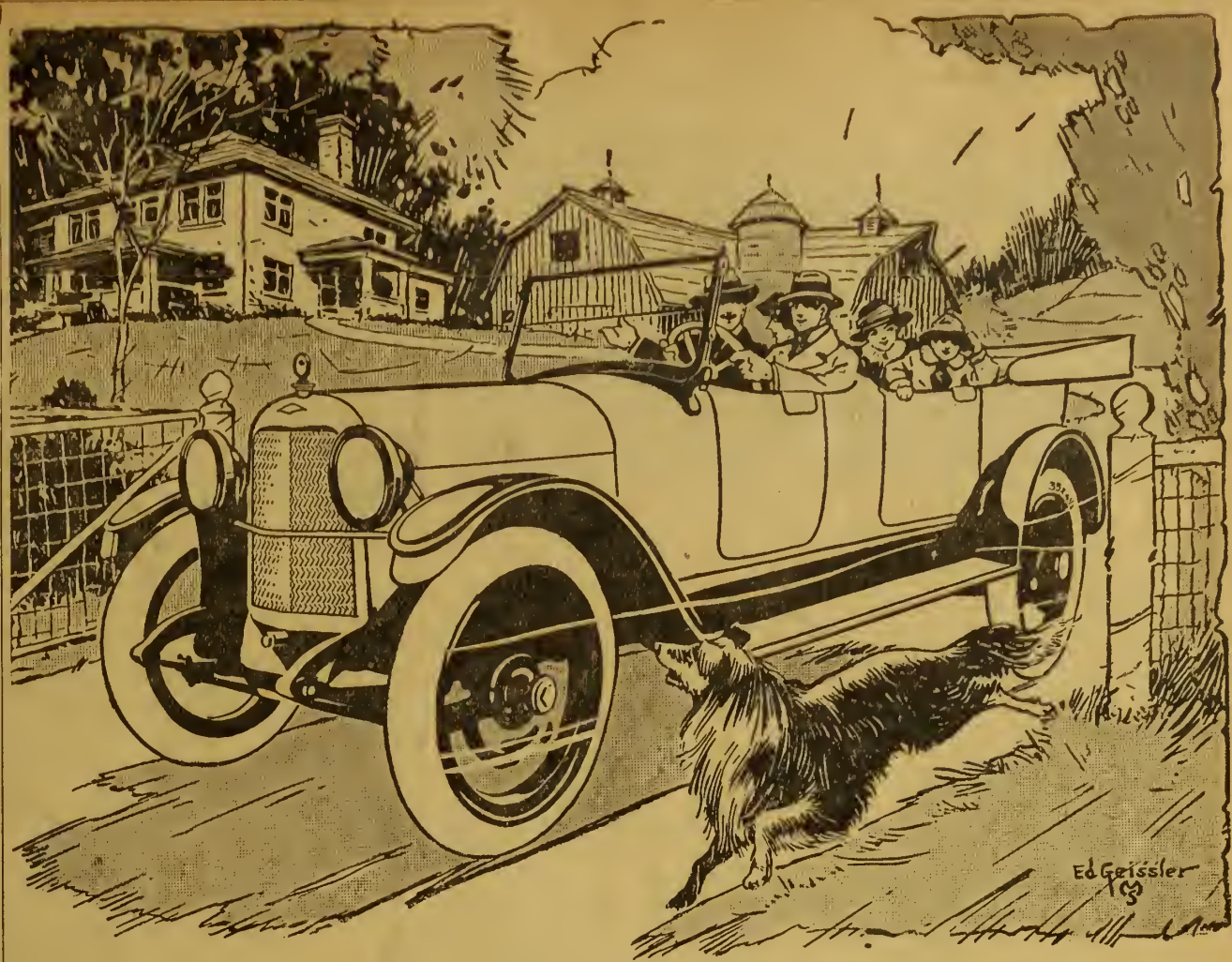
The annual report of Swift & Co., packers, just made public, shows net profits for the fiscal year ended September 30, 1916, to be $20,465,000. This is equal to 27.3 per cent on $75,000,000 stock. The earnings for the previous year were 18.7 per cent. Quotations from the report follow:

Swift & Co.'s earnings for the fiscal year 1916, based on capital and surplus, are 16.93 per cent. Prices for nearly all commodities have ben relatively higher, beef probably having shown the least advance of anything. The price of cotton has nearly doubled the average of the past few years, and, while there is sure to be a reaction and a decline in price, the present conditions makes the demand for meats in the south exceedingly good. The fiscal year ended September 30, 1916, witnessed a large increase in the supply of cattle and hogs marketed. The increased receipts at nine markets over 1915 were: Cattle, more than 1,000,000 head; hogs, more than 4,000,000 head. Sheep receipts, however, were the smallest for many years. Prices for all kinds of livestock averaged higher.

Swift & Co.'s average payments per hundredweight at all plants, for all kinds of livestock during the fiscal year were: Cattle, $7.21 in 1916 against $7.10 the previous year; hogs, $8.49 in 1916 against $7.09 the previous year; sheep and lambs, $9.16 in 1916 against $7.85 the previous year.

"We paid the livestock raisers over $300,000,000 for livestock in 1916. This is more than $50,000,000 in excess of what we paid in 1915 or 1914.

"The average price we paid for all cattle was only a little higher than in 1915, but native fat cattle reached the highest average on record. Range cattle were about the same price as in 1915. The greatly increased receipts of these commoner cattle made a congested beef market for this grade of meat."



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The Most Beautiful Car in America

Power, Beauty and Dependability

FEW of us have the need or desire for a racing car.

We are quite content to let the "other fellow" take his chances at 70 miles an hour—while we spin along comfortably and safely with the speedometer needle registering 25 or 30.

But every man wants Power in his automobile—and particularly the farmer.

It is good to sit behind a motor which responds eagerly—buoyantly—to the slightest touch of the throttle.

It is good to know that you need only "step on" the accelerator—and the steepest hills will flatten out like smooth boulevards.

It is good to realize that you command a vast store of reserve power which will easily take you through the heaviest sand roads "on high."

It is good to know that your automobile is a staunch, sturdy, dependable help-mate—not a treacherous weakling that will lay down when the real work begins.

In a word, it is good to own just such a car as the five passenger Paige Linwood "Six-39." This car is a thoroughbred—every inch of it.

It is just as handsome as an automobile could possibly be, and easily capable of doing 60 miles per hour if you desire to travel that fast. But—first and last—it is made for work—consistent work—day in and day out work.

Remember, Paige owners don't have to make apologies or "offer excuses." Their cars are out of commission at one time only—when they are locked up in the garage at night.

And—best of all—you can readily establish these facts for yourself.

All that you need to do is get in touch with the nearest Paige dealer.

Let him prove his case. Let him introduce you to men who have invested their money in Paige cars. Listen to their experiences—ask for their honest opinions.
Then, you will know whether Paige cars are reliable under all circumstances.

Then you will know whether Paige cars are economical to maintain.

Then you will know whether Paige is the type of car that you have been looking for.

Do this—while the Dealer can still make immediate deliveries.

Linwood	"Six-39" 5-passenger	$1175 f. o. b. Detroit
Fairfield	"Six-46" 7-passenger	$1375 f. o. b. Detroit
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Complete Line of Enclosed Cars

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San Luis Valley Hog Raisers Meet

CHOLERA ERADICATED BY COMMUNITY CAMPAIGN

Stock Judging at the Farmers' Short Course, Monte Vista, Colo.

VETERINARY science, sanitation, prevention and co-operation are the four elements that have saved the hog industry of the San Luis valley from destruction thru hog cholera. The savior was Dr. George H. Glover, who is now referred to in that section as "the best friend the San Luis valley ever had." Annually the hog raisers of Rio Grande county now gather to cast up accounts for the preceding twelve months. They meet at a banquet in Monte Vista, under auspices of the High Order of Grunts, which may sound like a joke, but isn't.

Four years ago the hog raisers in that section were facing annihilation of their business thru the ravages of hog cholera. They had called Dr. Glover down from the Agricultural college to advise them. His was the only word of cheer they got at that meeting, the growers being in a pessimistic mood. He advised an organized campaign of eradication and prevention; advised engaging a scientific veterinarian to be given full power to clean up the district, his work to be supported by all hog raisers.

His advice was followed and the end of the fourth year finds the disease eradicated; finds 1,600 carloads of hogs shipped out during the previous twelve-month; finds the hog raisers getting big money for their famous pea-fed pork. There have been one or two sporadic outbreaks of the disease in the last year, but so promptly were they met that there was no spread. The veterinarian has been able to accomplish this result at a cost of only about $3,000 a year.

The organization is a stock company its official name being the Monte Vista Hog Growers' association. The stock is assessable and no member can hold more than one share. The first year each stockholder paid an assessment of $10 a share, while the business men of Monte Vista helped by contributing $800. Dr. P. C. Guyselman was engaged as veterinarian and he served in that capacity until the present time, resigning at the recent business session to enter private practice at Montrose. A successor is to be engaged at once, as the association finds the plan well worth continuing. There are now about 300 members and the 1916 assessment amounted to $12.50 a share, which the hog raisers consider a mighty small sum to pay for the protection they have enjoyed. The officers of the association are: W. H. Tully, president; W. W. Wright, first vice-president; Adam Deitrich, second vice-president; J. L. Jemison, third vice-president; R. L. Stitt, treasurer; Charles Edman, secretary. Directors, in addition to the above officers: J. A. Bond, G. W. Gates, William Robertson, W. E. Kistler. Advisory board: R. G. Breckenridge, A. S. Chase, C. Bowsher, R. L. Stitt, Jesse Stephenson, W. H. Fassett, J. T. Wallace, John McArthur, Charles Akers, J. H. Goodnight, A. B. Van Nostrand, R. A. Chisholm.

Preceding the banquet of the H. O. G. club, which is a social organization auxiliary to the Hog Growers' association, Monte Vista filled up with farmers attending the annual short course conducted under the direction of the Extension department of the Agricultural college, co-operating with E. H. Thomas, district agricultural agent for the San Luis valley. There was an excellent exhibit of livestock brought in from surrounding farms and the stock judging, under direction of Prof. C. I. Bray, proved to be one of the best features of the short course. Among others who lectured were A. E. Lovett, state leader of county agents; W. E. Vaplon, state leader of b ys' and girls' clubs; E. H. Bader, Dr. Glover and Mrs. Jessie Harwood.

The average cost of keeping a farm horse is $85 a year. Are you getting that much value out of your animals?

The Sign of a SQUARE DEAL On Fencing

This is the famous Square Deal Lock—a guarantee of long life fencing. Its shape makes it self-draining and prevents rust. Its double grip locks the stay and strand wires 4 ways—without cutting, breaking or slipping. Look for this lock when you buy fencing and you will be sure of getting a Square Deal and most value for your money.

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is the favorite field and stock fence of discriminating farmers everywhere. It stands tight and trim the year 'round. The heavy 99¾% pure galvanizing resists rust. The one-piece stay wires prevent sagging, bagging and buckling—pigs can't go under. The wavy strand wires give springiness, elasticity, life—act like steel springs when sudden pressure is put on the fence.

FREE To Landowners who have not had a copy, we will send our new Square Deal Catalog; also Ropp's New Calculator—a 160 page book (worth 50c) that will give you the answer to almost any farm problem you have. Both FREE.

Keystone Steel & Wire Co.
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Our big FREE catalog shows everything new in bicycles and sundries. Write for it.

TIRES, lamps, wheels, parts and supplies at *half usual prices.*

Do not buy a bicycle, tires, or sundries until you get our *wonderful new offers*, low prices and liberal terms. A postal brings everything.

Ranger Electric Lighted Motorbike

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Drilling Water Wells is a profitable, healthful year-round business. There are wells all around you to be drilled. Don't you want to get into a money-making business for yourself? Write for particulars. Star Drilling Machine Co. 669 Washington St., Akron, Ohio

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THE hinges on the barn of the old homestead were hand-hammered by the blacksmith. The iron was slowly and carefully made and was free from most of the chemical impurities that cause rust. That is why those old iron hinges lasted to see many doors come and go.

"ARMCO" IRON CORRUGATED CULVERTS

like grandfather's barn door hinges, are made of iron so pure that they resist rust. They will outlast many ordinary metal culverts and, like the old hinges, will endure after the men who place them have passed away.

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For full information on "Armco" Iron Culverts, Flumes, Sheets, Roofing, and Formed Products, write the manufacturer in your vicinity, or

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American Fence

Woven with a mechanically hinged joint. Big, full gauge wires—full weight—full length rolls. Superior quality galvanizing—proof against hardest weather conditions.

American Steel Fence Posts last a lifetime. Hold fence secure against all conditions.

Sent Free—Our Book, "How to Build a Fence."
Dealers Everywhere

AMERICAN STEEL & WIRE COMPANY
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Awarded Grand Prize at Panama Pacific International Exposition
The Supreme Award of Merit

Raise High Priced Wheat on Fertile Canadian Soil

Canada extends to you a hearty invitation to settle on her FREE Homestead lands of 160 acres each or secure some of the low priced lands in Manitoba, Saskatchewan and Alberta. This year wheat is higher but Canadian land just as cheap, so the opportunity is more attractive than ever. Canada wants you to help feed the world by tilling some of her fertile soil—land similar to that which during many years has averaged 20 to 45 bushels of wheat to the acre. Think of the money you can make with wheat around $2 a bushel and land so easy to get. Wonderful yields also of Oats, Barley and Flax. Mixed farming in Western Canada is as profitable an industry as grain growing.

The Government this year is asking farmers to put increased acreage into grain. Military service is not compulsory in Canada but there is a great demand for farm labor to replace the many young men who have volunteered for service. The climate is healthful and agreeable, railway facilities excellent, good schools and churches convenient. Write for literature as to reduced railway rates to Supt. of Immigration, Ottawa, Can., or to

160 ACRE FARMS IN WESTERN CANADA FREE

J. L. PORTE
Dunn Block, Great Falls, Mont.
Canadian Government Agent.

Farm Loan Information

Announcement some time ago from the Federal Farm Loan board to the effect that more than one loan association may be formed in a given territory has given rise to some misunderstanding, which is now cleared up in a letter from Herbert Quick, a member of the board, written to W. E. Denman, secretary-treasurer of the Bennett (Colo.) National Farm Loan association. This is to the effect that the board reserves the right to determine whether or not it is necessary or convenient to have more than one association in a given territory. Mr. Quick's letter follows:

"Dear Sir—So far as your problems of organization are concerned you will have to work them out yourself. We cannot undertake here to interfere in the detail of such matters.

"The following statement, however, I can make to you for your instruction.

"First, no application for charters have as yet been considered.

"Second, no such things as subordinate farm loan associations are provided for in the law. All associations stand on an equality one with another, and each association is independent of every other.

"If two associations choose to get the same person to be secretary-treasurer that is a matter of policy which is up to the associations themselves, but that does not render one association subordinate to another.

"Third, so far as the territory of each association is concerned, it works that out for itself. If an association, however, should choose a territory larger than is necessary or advisable this board will have the power to cut the territory down. Otherwise an association might choose a whole state for operating.

"Fourth, two associations may do business in the same territory, but this board reserves the right to determine as to whether or not there is any necessity or convenience for such overlapping of territory.

"Complete sets of blank forms are not available, such blanks as are available will be forwarded to you by mail.

"Yours sincerely,
"HERBERT QUICK."

Central Valley Association

The Central Valley Farm Loan association has been organized, taking in the central part of Adams county and one tier of townships in northern Arapahoe. The directors elected are as follows: J. W. West, W. W. Warren, J. W. Smith, A. J. Nordloh, Ray Shoemaker, R. C. Noye, E. E. Geiger, C. A. Collins, J. D. Ashby.

Frank McDonough, Jr., of Denver, a member of the law firm of McDonough & McDonough, was elected secretary-treasurer.

E. E. Geiger, one of the directors, is in receipt of the following letter from W. W. Flannagan, secretary of the Farm Loan board, in reference to the voting powers of members:

"Please find enclosed circulars 1 and 5 and other material relating to the Federal Farm Loan System. The information given you with reference to voting was correct. Each member has one vote for each share of stock up to twenty votes, that being the limit fixed by law. If an attorney informs you that you had no right to vote shares of stock and would have to give thirty days' notice, he is in error.

Answers From the Board

Below are reproduced a number of the questions most commonly asked in letters coming to the Federal Farm Loan board, together with the answers furnished by direction of the board:

What constitutes an "actual farmer?"

An actual farmer is one who conducts the farm and directs its entire operation, cultivating the same with his own hands, or by means of hired labor. An owner, to borrow under the Farm Loan Act, must be responsible in every way, financially and otherwise, for the cultivation of his land.

What is the meaning of "equipment?"

Equipment consists of the implements needed in the conduct of a farm to facilitate in its operation. It might consist of teams as well as machinery, tools and like articles.

What is the meaning of "improvement?"

Anything in the form of beneficial structure, or any useful, permanent physical change tending to increase productive value, such as clearing, tilling, draining, fencing, buildings, etc.

Has a Farm Loan association the right to appoint an attorney to draw up abstracts and pay him out of its official funds, or should the members of the association club together as individuals and have this done?

Each borrower is required to furnish his own abstract and the applicant must stand the expense of preparing this abstract. An association has no right to employ any of its corporate funds to pay for the preparation of abstracts for its members. This must be an individual charge, and if members of an association club together to have this work jointly done they must do it as individuals and not as an association. Each borrower is free to make his own choice in the selection of an attorney or abstractor.

Will the Federal Land banks make any charge for examination of abstracts of title?

The examination of abstracts, when furnished, will be made by the bank's general attorney at its office, and for this examination no charge will be made. In districts where abstracts are not obtainable except by examination of the records, the borrower will have to bear the cost of such examinations.

What is the basis for appraising lands?

The appraisement of a farm should represent the best judgment of the members of the loan committee as to the value of the land in question, the principal factor being the productivity of the land when used for agricultural purposes, but taking also into consideration the salability of the land and prevailing land prices in that community.

Bean Threshers

Is it profitable for a farmer to buy a bean thresher for his own use?

I don't think you would find this a profitable investment. Bean threshers are made in several sizes, yet an investment even in a small one requires quite a little outlay, and unless you could do quite a little custom threshing, it would be better for you to co-operate with your neighbors and buy a thresher, in which way it would cost each one of you but a small amount.

$1150 F. o. b. Racine
Mitchell Junior—a 40-h. p. Six
120-inch Wheelbase

Mitchell SIXES

$1460 F. o. b. Racine
7-Passenger—48 Horsepower
127-inch Wheelbase

Why 100% Over-Strength
In This Year's Mitchell Cars?

One of the chief Mitchell extras is twice the needed strength in every vital part.

It has taken three years to bring the Mitchell up to this new standard. We first announce it in 1917 cars.

Now it is widely said that this standard is extreme. Let us see.

A Foreign Standard

This is a foreign standard. John W. Bate, our efficiency engineer, spent a year in Europe in 1913. This double strength is one result of that visit.

The European idea is to build things to endure. And they apply that principle to their finest cars.

Years ago, when motor types were constantly advancing, endurance was not so important. Few bought their cars to keep. But now that cars are standardized, durability seems vital. Mr. Bate believes that Mitchells should be lifetime cars.

The Extra Cost

A big margin of safety is costly in these times. Over 440 parts in the Mitchell are built of toughened steel. Many parts are oversize. All parts which get a major strain are built of Chrome-Vanadium. The steel in Mitchells costs as high as 15 cents per pound. Gears are tested for 50,000 pounds per tooth.

Such things would be impossible in these big cars at Mitchell prices, save for factory efficiency. They are possible here because Mr. Bate's methods have cut our factory costs in two. And over-strength is the best way we know to spend that saving for you. It means endurance, safety and low upkeep for you.

TWO SIZES

Mitchell—a roomy, 7-passenger Six, with 127-inch wheelbase. A high-speed, economical, 48-horsepower motor. Disappearing extra seats and 31 extra features included.
Price $1460, f. o. b. Racine.

Mitchell Junior—a 5-passenger Six on similar lines, with 120-inch wheelbase. A 40-horsepower motor—¼-inch smaller bore than larger Mitchell.
Price $1150, f. o. b. Racine.

Also all styles of enclosed and convertible bodies. Also demountable tops.

Many Other Extras

You will also find in Mitchells 31 extra features. These are things, like a power tire pump, which practically all cars omit.

In this year's cars we add 24 per cent to the cost of finish, upholstery and trimming. This is paid for by savings in our new body plant.

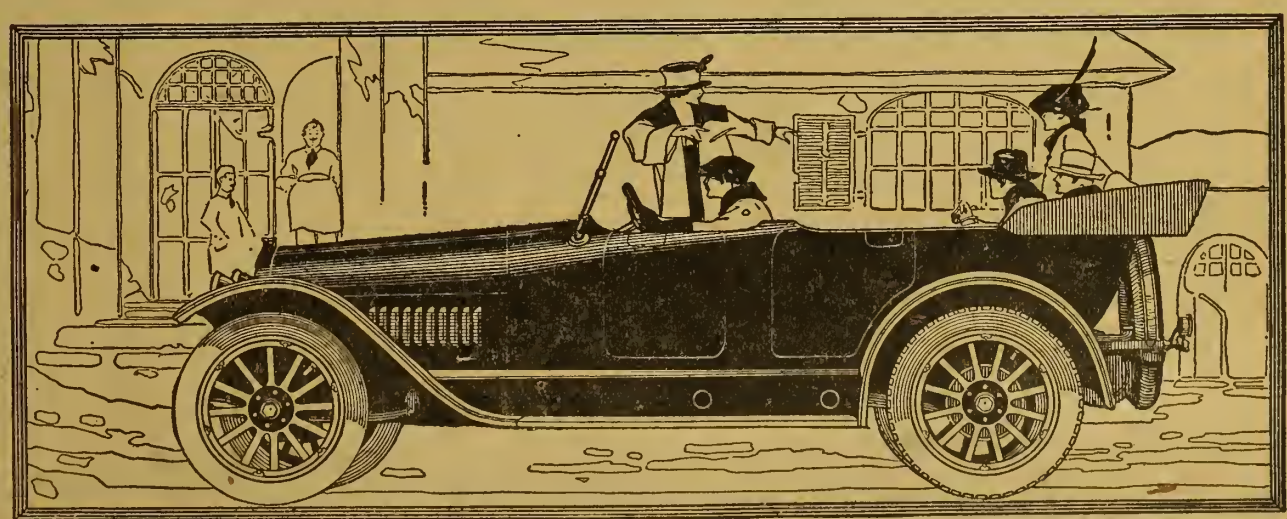
See all these extras, and judge what they mean to you. They cost us on this year's output at least $4,000,000. They cost you nothing, because Bate factory methods save it in our shops.

An $1150 Model, Too

This year's Mitchell comes in two sizes—Mitchell and Mitchell Junior. Both are roomy and powerful Sixes. But one is for seven passengers and one is for five. So you don't need to pay for more power and room than needed.

If you don't know the nearest Mitchell dealer, ask us for his name.

MITCHELL MOTORS COMPANY, Inc.
Racine, Wis., U. S. A.



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Our Farm Tenancy Problem

Is it possible that the new farming regions of the West are facing a problem of farm tenancy that threatens to disrupt rural community life? Statistics point strongly in that direction and in a few localities facts speak more loudly than figures. In the irrigation districts there is a drift cityward by wealthy farmers, who are leasing their lands to tenants under conditions that forecast exhaustion of the soil as well as the eventual breaking up of rural community life. Every reader of Western Farm Life should study with care two articles that appear in this issue, one of them from the pen of W. M. Jardine, dean of agriculture at Kansas State Agricultural college and the other by C. G. Sargent, professor of rural education of Colorado Agricultural college.

Prof. Jardine, who is a deep student of rural life problems and familiar with conditions from the Missouri river to the Pacific coast, sounds a warning. Prof. Sargent gives the remedy, which, happily, is already being applied in Colorado, Idaho and some of the other Western states, but as yet on a limited scale. The problem is the drift from the farm to the city; the remedy, development of rural leadership and raising the standard of rural schools thru consolidation.

We have instances right here in Colorado of farmers in our irrigated sections, grown wealthy after ten to fifteen years of effort, leaving the farm for the small town and turning their lands over to tenants. Other instances of farmers whose feeding operations have made them rich in a few years and who are investing their surplus in additional land, which they are turning over to tenants. These instances are a tribute to the productive value of our lands as well as to the business capacity of our farmers, nevertheless, they are not an indication of healthful and progressive country life.

The remedy lies in making social and educational conditions in our rural districts as attractive as those which exist in the city. Reform in our rural school system is the first move in that direction. There are other things that must follow, such as long term leases in which provision is made for maintaining the fertility of the soil; opportunities must be given the tenant to become a landowner. In that respect we now have a rural credits law that will help, if the landlord is willing to do his share. The conscience of the absentee landlord must be awakened. He has a responsibility to the rural community that does not cease when he leaves the farm, unless he is so shortsighted as to think only of present prosperity. After all has been said thot returns to the rural school, the rural teacher and to the rural pupil. Read the articles of the two educators and you will agree that both have touched the problem at its source. May the warning not go unheeded.

✦ ✦ ✦

The Oleo Propaganda

Under the guise of cutting the high cost of living an effort is being made to have Congress reduce the tax on COLORED oleomargarine from ten cents to one cent a pound. In order to gain public sympathy for this proposal the facts are being carefully concealed. It is not made clear that the tax on UNCOLORED oleo is only a quarter of a cent a pound and that this effort is, in truth, intended to take from the public the protection given against frauds in palming off colored oleo as butter. As long as oleo is sold for what it is and it retains its natural color, white, the public cannot be imposed upon. But if the bars are let down and the prohibitive tax is taken from the colored article it means that fraud will be attempted and butter will have to go into competition with the imitation.

To allow the sale of colored oleo would not reduce the price of butter, but would give the oleo manufacturer an undue advantage over the dairy farmer that eventually would drive many out of business and still further increase the cost of butter, oleo ascending along with it as the monopoly would become more firmly intrenched. In the end the consumer would be paying butter prices for a poor imitation.

There is still another and far more serious side to this question. The preservation of soil fertility—in other words, the very life of agriculture in America—is dependent upon dairy and general stock farming. To allow the oleo maker a free hand would rob the farmer of his market and, consequently, he would be forced out of the dairy business. More than half of our hogs are produced in connection with dairying and when the cows go it means that pigs, too, become unprofitable.

This is a fight for the preservation of the dairy industry and all that this industry involves in the way of soil improvement and sane agricultural practice. It is hardly conceivable that Congress would take a false step, nevertheless, the interests back of the oleo propaganda are making a strenuous effort and they have already succeeded, thru the press, in fooling a good many well meaning city people who do not understand the situation.

✦ ✦ ✦

The State Fair Question

There is talk of state appropriations for district fairs in Colorado, as a solution of the state fair question. Pueblo is the seat of the state fair, but the exposition held there annually is not representative of the state as a whole. Longmont is seeking to be made headquarters for a Northern Colorado district fair with state aid for its county fair, which already compares favorably with the county fairs of back east states.

Because of transportation difficulties due to our topography, it is impossible to determine on any particular place as ideal for a state fair, hence the suggestion for district fairs is worthy of consideration, with Pueblo for the southern, Longmont the northern and Grand Junction for the western district. This plan may furnish a way of providing suitable expositions, each given the necessary state aid, with the proviso that they be made strongly educational in character, the management and control of all three to be placed in the hands of the state board of agriculture. Western Farm Life submits the suggestion for consideration of the legislature.

✦ ✦ ✦

Board Reverses Itself

In our last issue we called attention to certain ill-advised suggestions emanating from the office of the Federal Farm Loan board at Washington with reference to the engagement of a common secretary-treasurer by a number of associations. It is encouraging to note that the board has found it advisable to reverse itself in regard to this suggestion. On another page of this issue will be found an announcement from Washington asking farmers to beware of professional organizers and closing with the statement that the board urges farmers to organize small units where practically all the work can be done gratis by members of the association. Evidently wiser counsel has prevailed and the system is not to be permitted to fall into the hands of scheming lawyers, for the board states that careful scrutiny will be given any association that appears to have been organized for purposes of private profit.

✦ ✦ ✦

As to Crop Prospects

Winter wheat in the Rocky mountain states is coming thru the cold season in fine shape, according to all reports. There has been a fair amount of moisture, a snow covering in most localities and very little trouble from wind or freezing up to the present time. Farmers in the dry land districts are approaching spring with the feeling that there is a good year before them. They are paying the high cost for everything in the line of seed, especially for Sudan grass, pinto beans and alfalfa. The farmer who produces his own supply is the fortunate and the rare exception.

Snow reports from the range indicate good prospects for the irrigation farmer next summer, with two months more of the snowy season ahead of us. On the whole, early crop prospects for 1917 are favorable thruout the mountain region.

✦ ✦ ✦

Factory-made butter in the United States increased from 627,145,865 pounds in 1909 to 786,013,489 pounds in 1914; and factory-made cheese increased from 311,175,730 pounds in 1909 to 377,506,109 pounds in 1914.

TO OUR WOMAN READERS

Some time ago I told you that I had other good things in store for you, in the way of improvement of the editorial pages of the magazine. One of these has developed, and announcement is herewith made of the engagement of a new member of the editorial staff, namely Mrs. H. T. French.

Mrs. French takes charge of the Home department, which has been without leadership for some time, while I was looking for the woman who had western farm training and experience, who knew the western farm home and its problems, and who could write about and for the farm home sympathetically and, more than anything else, could find a way to bring a response from our women readers.

I have felt for some time that the magazine did not give sufficient attention to home problems, but it just seemed we had so much call from the men for information about this, that and the other, that—well, you know about how it is with a man; he naturally thinks the affairs of the men are of more importance than those of the women—until somebody brings him to his senses. I'll confess that somebody did give me a talking to about our home department. This somebody is a man who is nationally known as an agricultural worker; a man whose word goes a long way with everybody interested in building up farming. I took it as a compliment that he looked over Western Farm Life and pointed out its weak spots and I realized that he laid his finger on one when he said, "You are not serving your women readers as you should."

So that is the reason Mrs. French joined the Western Farm Life family. She conducted the Home department of the Gem State Rural in Idaho for four years, was lecturer for the Idaho State Grange, taught in the rural schools; has been active in the Mothers' Congress, has written much on the subject of child training—and she is a mother and speaks with authority; she knows the problems that confront the women of our western plains and mountains and just seems to fit into every part of that plan of mine for bettering the magazine and giving the women something of a helpful nature in every issue.

There is just one thing, however, that no writer, no matter how able or sympathetic, can do, and that is to make the home page interesting without the help of the readers. There are thousands of you women on the farms who are reading this announcement and who have ideas and convictions on subjects pertaining to home improvements. You have often thot of writing something for us; you have decided more than once to drop us a line asking about this or that problem. Now follow that impulse, knowing that your communication will go into the hands of a woman whose ear you already have. Help us make Mrs. French's work count. Have you ever thot of this—you are getting the best that is in us for your dollar a year and we believe it is a big dollar's worth. You owe us some co-operation in making the magazine a success. You have in your home some device, some household arrangement, some good old-fashioned recipe, some antique, some bit of art needlework, some old book that comes down to you from your ancestors who came over in the Mayflower, or maybe not till the late '80s; some rare painting—something interesting that other women would like to hear about. Maybe it is a pioneer experience. Now think it over and write Mrs. French a letter about it. She is one of our big family now and you ought to make her feel welcome. Make it just a little note of encouragement if nothing else. May we hear from many of you?

W. S. Edmiston
General Manager.

BRIEF ITEMS

Soy-bean flour can be used successfully in making muffins, bread, and biscuits much in the same way as corn meal is used.

✦ ✦ ✦

Farmers' Bulletins to the number of 150,650,850 have been printed by the U. S. Department of Agriculture since the series was inaugurated in 1890.

✦ ✦ ✦

The area devoted to the cultivation of tobacco in the United States in 1915 was 1,368,400 acres. The production of tobacco was 1,060,587,000 pounds, and the farm value on December 1, 1915, $96,041,000.

✦ ✦ ✦

Approximately 20 per cent of each potato pared by ordinary household methods is lost in the process. The loss includes much and sometimes all of the portion of the tuber containing important soluble salts. Potatoes that are boiled and baked in their skins lose practically none of their food value.

✦ ✦ ✦

Mr. J. W. Weaver of Edgewater has bred up his seed wheat thru cleaning and selection from a test of 57 pounds to 64 pounds and grows about twice the amount per acre than do those who do not select their seed. He finds a ready market for his wheat seed at home, at an advance of 50 cents per hundred pounds above the market price.

✦ ✦ ✦

Irish potatoes and most other vegetables and fruits tend to make the body tissues and fluids alkaline, so correcting the tendency of meat, eggs, fish, and similar foods to create acid conditions. Since the body performs its work best when it is neutral or slightly alkaline, this function of fruits and vegetables is important, especially to the hearty meat eater.

Comment by Farmer Putnam

GIVES SOME INSIDE HISTORY OF THE IRISH POTATO AND TELLS OF HIS EXPERIENCE WITH "JOSEPHINE"

Denver, Colo., Feb. 25, 1917.

SPUDS is gittin' so important that I've got to write about 'em. Any time a common vegetable gits to sellin' fur as much as oranges it's time to immortalize it in literature. To begin with, what is a potato? Answer, a potato is a luxury for the rich. Maybe that definition won't be no good next year; we may have to say: A potato is a vegetable mostly fed to pigs, because they is so plentiful. One season they're awful common and the next only the plutocrats kin afford 'em.

The potato has got a Latin name—Solanum Tuberosum, and if they keep on goin' up we'll have to order 'em by that name soon. Of course now the grocer wouldn't know 'em and probably would send us to the flower shop if we asked fur 'em in Latin.

Latin names was give to plants so's the common people couldn't understand the scientific bulletins. It's one of the survivals of the Dark Ages, when all the learnin' was locked up in the libraries of the priests. Some day the botanists'll find out that the general public don't recognize plants by their long scientific names and then they'll call a spud a spud.

The potato is a full blooded Americano, comin' originally from South America where it growed wild. It was tamed by the ancient Incas, which was a tribe of Indians with a good name and a bad reputation that lived—and died—in Peru before Columbus run the submarine blockade back in 1492.

Them Incas growed potatoes up as high as 12,000 feet in the Andes mountains. You see in them days they didn't have no weather bureaus and such to tell 'em about altitudes, frost-free periods, average rainfall and them other limitin' factors to agriculture, and the poor ignorant people, knowin' nothing about it, just fool-like kept gittin' higher up and higher up with their crops, knowin' no better than to plant and harvest without regard to scientific knowledge.

Sometimes it pays not to know nothin'. Nowadays we know you cain't mature potatoes on top of Pike's Peak and we don't try, but if them Incas was alive they would have farm crops growin' up in the clouds with direct irrigation hangin' over 'em all the time.

Well, by and by the Irish heard about the potato and they adopted it and give it their name, which was the greatest compliment ever paid to any vegetable and wasn't no slander on the Irish. Before potatoes was introduced in Ireland they used to have lots of famines, because the men was too busy fightin' to cultivate the ground. After the potato was brot in they growed so well without attention that it didn't interfere with the national sport, and famine was a thing of the past.

By and by Germany heard about potatoes and the king, seein' they was nourishin', ordered the farmers to plant 'em, and they done so. It's a simple thing to git a new crop introduced in Germany. Them Germans don't argue with the ruler. Now in our country it's different. If the president was to order all the farmers to plant potatoes they would quit growin' 'em just on general principles. We'd starve ruther then take orders. Well, by and by all them other European countries got to growin' potatoes, includin' Rooshia. Ireland developed potatoes O'Brien, and Germany got famous fur kartoffel-salat, the French invented potatoes au gratin and the hull civilized world was gittin' along fine till our mountain spuds come on the market. After that they lost their taste fur common potatoes and they's been a season of unrest in the potato world. Now everybody's demandin' the kind we raise out here.

You see the trouble was that they had been comin' in all shapes and sizes, runty little warts and big pumpkin size in one hill. A hill of potatoes is a good deal like a human family. Pat takes after his paw, is tall and strong and freckled; little Mike is like his mother, as broad as he is long, bow-legged, red-haired and shows his upper teeth; Terence is fat and stubby—no two of 'em alike but every one a Murphy.

Now what the growers is tryin' to do is to git' em more uniform in type and size with nice smooth, thin skin, easy to handle, easy to bake or cook, and nice to look at. But what the growers out here is doin' don't go fur enough. You got to educate the consumers in cookin' 'em. Of course I don't want to have nothin' to do with that part of the work. I tried it at home the other day. I was watchin Josephine—that's my wife—peelin' potatoes. She dug away the peelin' about as thick as a orange peel and I sez:

"Woman, don't you know you're cuttin' away the corticle layer and losin' all the protein in that potato?"

"What air y' drivin' at Tom," she sez. "Do you want to eat the peelin like a pig?"

"I didn't say peelin', I said corticle layer."

"Tom," she sez, severe like, "you git right outen this kitchen. Don't you come at me with them high soundin' scientific words. You been a-readin' Gene Grubb's book. Try that cork layin' business on your Western Farm Life readers and don't instruct me how to peel and cook spuds. I been at it too long."

I tried to reason with the woman, but her mind was made up—it's never unmade when I tackle her. I told her about what the authorities sez about protein, carbohydrates and starch in the potato but she just sniffed and sez:

"Tom, them men what wrote them books never spent a day in their lives in a kitchen. They don't know no more about cookin' than a hog does about prayer meetin'. When I make a roast I serve mashed potatoes; when I have boilin' beef I serve steamed potatoes and when I kin git 'em, which ain't any too often, I have baked potatoes fur you. Now if you don't like my system you go somewheres where they follow them books and cook 'em according to the carbone hydrants and pro-tones. No professor kin tell me how to cook. You go in thar and set down in the library; Tillie will call you when dinner's ready."

What you goin' to do with a woman like that? Some people just won't listen to reason.

THOMAS JEFFERSON PUTNAM.

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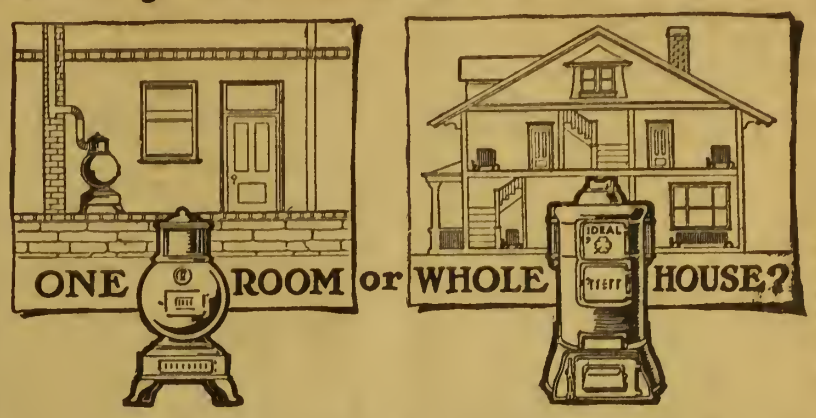

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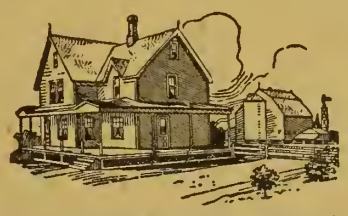

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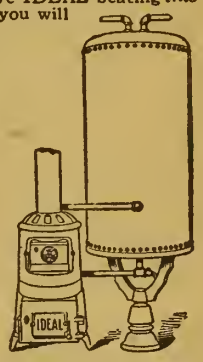

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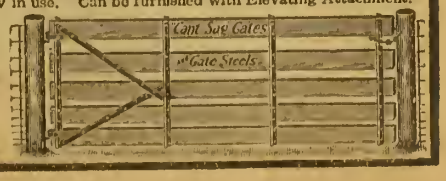

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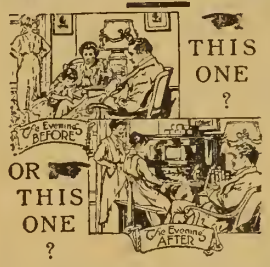

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RAY E. HUTSEL

White Leghorn Flock on the Farm of E. J. Bell, Boulder, Colo. These Hens Have the Run of the Farm.

THE fowl and the farm go together. The man in town is handicapped in numberless ways in the keeping of fowls; but the dweller in the open country is free to do anything he pleases. The average farmer ought, therefore, to give special attention to the culture of poultry at a time when meat and eggs are selling at prices quite beyond the reach of millions of people.

During large portions of the year the farmer can permit the fowls to run over large parts of the farm, and so be able to conserve an immense amount of feed that would be otherwise wasted. Such foraging, too, is the best thing possible for the fowls.

It is said that several sheep can be pastured with a half a dozen cows without interfering very much with the grazing advantages of the cow. The sheep eat weeds and thistles and other things that the cow would not touch. This is a double advantage; the sheep are fed and the fields are kept clear of much vegetation that would be worthless to the dairy.

The same principle works in the keeping of two or three hundred fowls on the average farm. A large portion of their feed can be picked up which would be otherwise wasted. This is especially true with the grain of all kinds about the barns and in the fields. Many dollars are saved in this way to the farmer who keeps a large flock of hens. I have said nothing about the limitless amount of green feed that would rot if not eaten by a few hundred hens. Worms, grasshoppers and an endless variety of insects by the millions are gathered up by the fowls and transformed into the most valuable food product. Without the hens, these would be insufferable pests, devouring the farmer's other profits.

In winter, the pivotal season in poultry culture, the farmer again has an immeasurable advantage. In town the poultryman must purchase with good cash every ton of litter and feed used in the poultry house. The farmer, on the contrary, has all the grain he desires at first cost. He has straw of all kinds wasting into fertilizer of poor quality. There are likely to be great quantities of chaff from the threshing machine in which the fowls delight to dig, and in which they find far more grain than the farmer ever suspected. The problem of green food can be handled ten-fold more easily on the farm than it can in town. From the immense mass of cabbage, turnips, beets, etc., which the farmer stores in his cellar, or buries in the field, two or three hundred fowls can easily be supplied during the winter with all the green food they need.

So we might continue indefinitely to point out the numberless advantages the average farmer has in the handling of a large flock of fowls.

Many farmers are appreciating these advantages and are making a careful study of the problem of making the most out of poultry. But there is much to be done yet on what we call the "average farm." The poultry is mostly left to the women with little sympathy and co-operation from the men The women can do much and are doing a great thing all over the country in caring for the fowls on the farms. But the ideal will never be reached till the poultry department on the farm has just as good a chance as the dairy department, or the crop department, for that matter. For there is no part of the farm work that will bring greater profits in proportion to the labor and expense involved than the culture of poultry.

On the average farm the poultry department suffers from various causes. One of the greatest drawbacks is hatching chicks too late in the season. Everything, on the average farm, is left to the caprices of the hens. A brood or two may come off in March; but everything goes by chance. The large proportion of the chicks are likely to be hatched in May and June, and so on until the frost in September. The result is that the young stock is a motley mass of big and little, old and young, strong and weak. There is no classification possible. In the fall they are turned in together to fight the battle out on the principle of the "Survival of the fittest."

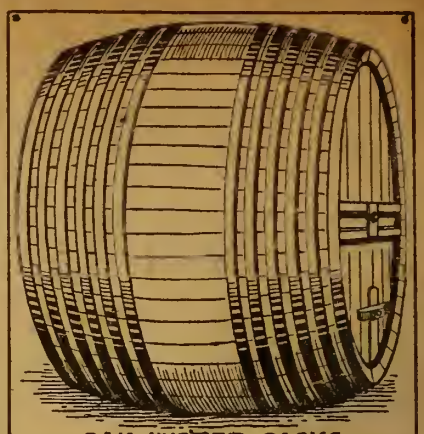
The remedy for this condition is artificial methods of incubation and brooding. The farmer must come to the point where he depends on the incubator and brooder in poultry culture as he depends on the mowing machine and horse-rake in doing his haying. Machinery has come to stay. The farmer must use it in all departments of farm work, from the sowing of grain to the incubating and brooding of chicks. If he does not he will be at a constant disadvantage. With the incubator he can get his chicks sufficiently early in the spring to insure him laying pullets in abundance in the fall. He can hatch as many as he desires and at any time he desires.

This will take work, I know; but it will not take as much work as will be required to care for a score of different flocks of different ages coming out of the shell from April to August. The incubator and brooder would simplify this work 500 per cent. The profits and pleasure of the work will, too, be equally multiplied.

When the farmer gives as much care and thought, and applies the same good judgment, to the culture of chicks as he does to the culture of his calves, he will have as small a proportion of death among his chicks as among his other animals.

It is still time to think about all these things and make ready for the busiest season ever on the farm. Eggs have sold steadily at from 35 to 50 cents per dozen since early last fall. Why should not the farmer get into this great game? His advantage next fall in the selling of eggs will largely be determined by what he is willing to do the next few weeks. In order to be sure of a fine flock of pullets at laying age by the first of October he might purchase a few hundred baby chicks. He should get them from a reliable

Continued on Page 14



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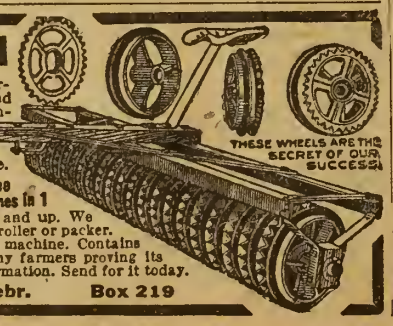

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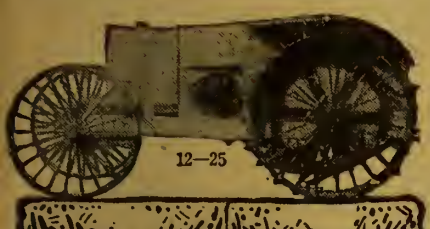

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With the Utah Farmers

The irrigation farmers of Utah recently formed an organization which has for its object the protection of water rights, the economical use of water and the solution of other problems that confront water users of the western states. Farmers from all over that state were in attendance at the organization meeting, held in connection with round-up week at the Utah Agricultural college, Logan. Ex-Governor Ammons of Colorado, who delivered several addresses to the Utah farmers during the week, suggested to the water users that they co-operate with similar organizations in other mountain states and this suggestion will be acted on, so that the irrigation farmers may soon have an organization that can make its influence felt in the regulation of problems constantly arising between the states and the federal government over the beneficial use of our streams.

Governor Ammons spoke on "The Part That Livestock Takes in the Development of the West," on "Beef Production" and on general western problems at the various conferences of farmers. The sessions were well attended and the program was of a practical nature thruout.

One of the interesting developments was the report on the boys' and girls' club work of Utah. The clubs have 4,000 members and are in flourishing condition, because proper financial support is given this work by the state and by some of the school districts. Over $9,000 was spent in organization work during 1916.

The showing made by the members was exceptional, the value of the products grown by the boys and girls being $100,000, produced at a cost of $31,000, with a consequent net profit of $69,000. Pig clubs are being especially stressed by the organizers.

Governor Ammons reports unusual interest in livestock all over Utah. At Salt Lake City he visited the new stockyards, which will be ready for business about April 1st. Frank Ball, formerly of the Denver yards ,is in charge. The Cudahy interests recently took over the local packing house at Salt Lake City and they are behind the project for modern stockyards and terminal facilities. Arrangements are being made for a fat stock show in connection with the opening of the yards.

Seed Bed Preparation for Dry Farm Spring Crops

Continued from Page 5

lent in Europe. There is no danger of doing any damage if the crop has been planted deep enough, is well stooled out, but not jointed and the soil is in the right condition for the work. If the top is crusted and tears loose in lumps then wait for a light shower. After the wheat or other grain is jointed, and even about to head, it can still be cultivated with the spring tooth weeder, which is made on the plan of the hayrake, but with stiffer teeth.

Treat Seed For Smut

To prevent rust and smut in grain and corn, or the wilt in flax, all seed should be treated with formaldehyde before planting. The formula is one pound formalin to 50 gallons of water. By formalin is meant the usual 40 per cent solution of formaldehyde sold at the drug and supply stores. The seed may be placed in loosely woven bran sacks and dipped in the mixture for about ten minutes and then spread out to dry or may be sprayed on the seed, which is thoroly stirred and mixed before spreading out to dry.

Smut in corn is difficult to control because the infection remains in the soil, but if the seed corn is treated as above and planted in new land the smut may be kept out for a number of years or until the wind brings the spores from some other patch.

Barley and Oat Straw

Western Farm Life Service Bureau:
Has barley straw as much feeding value as oat straw?—R. S., Boulder Co., Colo.

Oat straw possesses more feeding value than barley straw. In 100 lbs. of oat straw there are 1.2 lbs. protein and 38.6 lbs. carbohydrates. In 100 lbs. of barley straw there are .7 lbs. protein and 41.2 lbs. carbohydrates.

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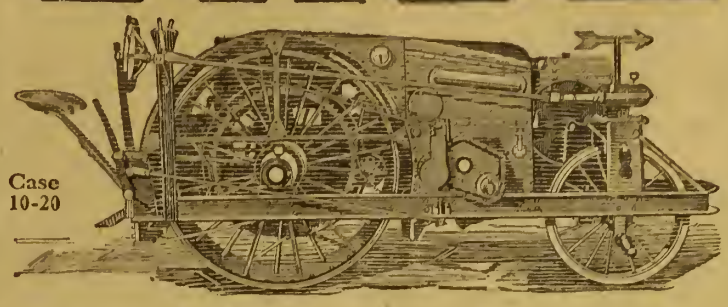

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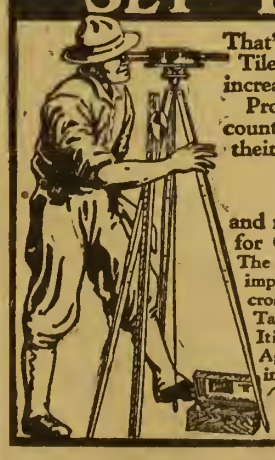

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Optional District Herd Law

Representative Kramer has introduced an optional herd bill in the Colorado legislature which, if it becomes a law, will solve this vexing problem for all concerned. The State Grange went on record at their recent convention in Denver in favor of an optional law and this measure was drawn in accordance with the ideas expressed by the delegates. Representative Kramer is state purchasing agent for the Grange.

The measure provides for the creation of herd districts, empowering boards of county commissioners to make orders defining the boundaries of such districts. Action to create a herd district is instituted upon petition signed by not less than 100, the same being two-thirds or more of the resident taxpayers of such proposed district. No persons residing in incorporated towns or cities are permitted to sign such petitions.

The petition must define the proposed boundaries of the district, and specify the kind of animals which are to be prohibited from running at large.

After such a petition has been filed the commissioners, upon determining from the records that the petitioners are resident taxpayers of the district, shall set a definite time and place to hear complaints against the formation of such district. Notice of such hearing shall be properly advertised in newspapers and thru the posting of notices.

If at such hearing it appears that two-thirds or more of the resident taxpayers are in favor of such district, then the commissioners must officially create the district.

In case of damage done by stock within a herd district the extent of same shall be ascertained by arbitration, the owner of stock to select one person, the party damaged selecting another person, and these two to select a third, the three to constitute a board of arbitration, from the decision of which board there shall be no appeal. Damage so fixed shall be collected the same as a judgment in a justice court. In case parties cannot agree to arbitration then damages may be recovered by civil action in any court of competent jurisdiction.

The bill further provides for the taking in custody of animals caught trespassing, the same to be held until damage inflicted and charges for keeping the animals shall have been paid.

It is provided, also, that it shall not be necessary to fence against domestic animals in districts created under the herd law, and that it shall be no defense to any action or proceeding brot that the party taking up the stock did not have his lands enclosed with a lawful fence.

This measure must not be confused with a bill introduced at the instance of a joint committee of the Colorado Stock Growers' association, Farmers' union and legislative committee of the State Grange, which is a fence law and not, properly speaking, a herd law. Members of the Grange interested in this legislation state that the action of their legislative committee is not in line with the resolution adopted by the State Grange, which clearly favored an optional herd law.

Poultry Culture on the Farm

Continued from Page 12

breeder; one who can assure him that his strain is of the bred-to-lay kind. At the same time he can be experimenting in the production of his own chicks with the incubator. With the proper care he should raise at least 90 per cent of all chicks. Suppose 50 per cent are pullets, which would give him 45 pullets from every hundred chicks that would easily be worth a dollar each at laying age, on November first. The cockerels should be marketed as broilers and would sell for enough to pay the keep of the pullets up to the time they begin to lay eggs. Now is the time to act if you want eggs and profits this coming fall and winter.

Communications addressed to Western Farm Life Service Bureau should contain name and address of the sender, so that reply can be made by letter. Only a few representative questions and answers are published.

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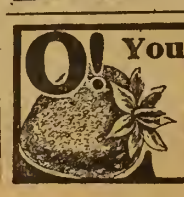

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Sizes 1 to 13 Heights 6 to 17 in.

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Water-Proof, Rust-Proof, Rot-Proof. Warm in winter, cool in summer. Weight about the same as an all-leather work shoe. Will outwear several pairs of leather, rubber or wood soled shoes. No metal touches you. Thick felt insole. Comfortable to wear. Keep the feet in good condition. Best by test for all work in any weather. MONEY BACK if shoes do not meet with your approval. Write for FREE catalog which shows styles, gives prices and tells how to order. A postal brings it.

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Dairy Farming Brings Profits

BUILDS UP SOIL, PROVIDES STEADY INCOME

RALPH GINGRICH

THE marketing of farm products is one of the most important factors dealing with successful farming, yet it is a subject that has been generally slighted by producer and consumer alike. Only recently has marketing received the attention that it merits. The housewife is acutely aware that her groceries are going up with little hope of relief, while there is a certain feeling of unrest among the farmers who want to improve conditions by cutting down the margin between the price they receive for their produce and the selling price to the consumer.

Marketing is a part of production. A dozen eggs in the hen house have

Value of Load of { Hay 12–15 Dollars / Grain 50 Dollars

but little value compared to the same eggs at the market, so it is true that production, as a whole, includes getting the produce to market along with the actual work of production. Clearly, then, if the producer wants to get the highest returns for his goods, he must look well to his selling department.

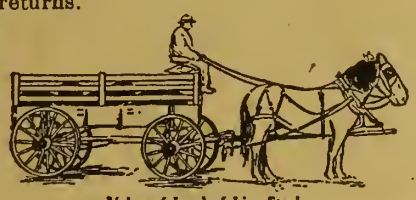
Exclusive Grain Farming

Grain farming takes the best part of the soil and makes no return of fertility. It is destructive agriculture. The crop is sold at one time, and a year elapses before there is another addition to the farmer's bank account. Good crops are followed by poor crops, so that the return is uncertain and generally insufficient with the consequent inconvenience and hardship attached. Straight grain farming offers no successful way of using the large amount of roughage, such as straw and corn stover, which results as a by-product in growing cash crops. Such materials are merely in the way and are disposed of in the easiest manner, often by burning without regard for the loss of vegetable matter so much needed by the soil.

Profitable Meat Production

By selling grain via the meat route, there is a better return than by straight grain farming. The advantages of selling at the stockyards are:

1. Keeping on the farm much of the fertility produced.
2. Crop insurance and increased returns.



Value of Load of Live Stock 80–120 Dollars

3. Better use of untilled land.
4. Better help and better distribution of labor.
5. Manufacture of crops into meat.
6. More farms operated by owners.
7. More permanent agriculture.

Profitable Dairying

Dairying is more profitable than straight grain farming or straight stock raising, as it builds up the soil at the same time providing a steady, reliable income. It is constructive agriculture. It offers steady employment thruout the entire year and thus the dairy farmer is able to secure men that are more efficient and more reliable. The product, cream, is concentrated and so can be hauled easily.

Cows Solve Many Problems

The part that the dairy cow is playing in successful farming, is treated in "Kimball's Dairy Farmer" under the above title, as follows:

"The three largest problems in American agriculture are: First, how to finance farm operations; second, how to increase production, and third, how to market crops efficiently and profitably. Of all farmers, the dairyman has most nearly solved all three of these problems. Bankers loan more freely and on more favorable rates of interest and terms of payment to men who milk cows, because it is a well known and generally accepted fact that the cow is the safest investment that can be made by the farmer who is honest, intelligent and industrious. The cow eats feed today, returns butter-fat tomorrow and the next day her owner may sell for cash the product. He can at once begin paying back, slowly but surely, the money he has been compelled to borrow.

Opportunities Are Unlimited

"For increasing production, the opportunities possessed by the dairyman are almost unlimited. By using well bred sires, raising his best heifer calves properly and by feeding intelligently and caring well for his cows, the productivity of his herd increases with each succeeding generation. Every day of her life the cow returns to the farm all but a minute percentage of the fertilizing constituents of the feed she eats, thus conserving the richness of the soil and insuring large crop production.

"Even more admirably she solves the problem of marketing. She eats a ton

Value of Load of Cream 150–180 Dollars

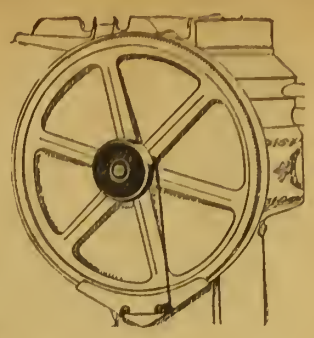
of hay or its equivalent in hay and grain, worth in the raw state from $5 to $25 per ton on the farm. She converts this into approximately 125 pounds of butterfat, worth in any section $37.50, besides the skim-milk she leaves on the farm to be fed to the calves, pigs and chickens. The butterfat can usually be marketed at home and to excellent advantage through co-operative creameries. If it is necessary to ship it, the problem is simplified because the ton or more of bulky material, such as hay and grain, has been reduced to the most concentrated form possible, so that in two small tubs of butter 20 bales and bags containing hay and grain can be shipped across the continent for less than they could have been hauled to market and shipped 100 miles in the raw state. The dairy cow simplifies farm financing, she increases production and solves the problem of marketing, while scores of the world's greatest minds are trying to devise a plan of how best these important things can be accomplished."

Holstein Cow Won Contest

The five-day economy contest at the National Western Stock Show, open to all breeds, was won by a Holstein, Grace Fayne Buttergirl, No. 148420, owned by Donley & Simpson at Mount Morrison, Colo., with a production of 315.4 pounds milk and 11.70 pounds butter fat for the five days; an average daily production of 63.1 pounds milk and 2.36 pounds fat while on show. During the exhibition, Grace Fayne Buttergirl consumed feed valued at $2.84, while her product was valued at $5.56.

The prize for the largest amount of butterfat was won by the same cow. Locust Grove Jewel Pietertje, No. 141905, was second with 10.92 pounds. Peggy Mercedes Paul, No. 172200, third, with 9.93 pounds fat.

The prize for largest amount of milk was won by Locust Grove eweiJ Pietertje, with an average of 68.2 pounds per day. Peggy Mercedes Paul, second, with 65.8 pounds per day, and Grace Fayne Buttergirl, third, with 63.1 pounds per day. Morny Cannon's Love Imp., a Jersey, averaged 36.1 pounds milk per day. All cows in the contest were put into the show ring. Morny Cannon's Love Imp. was grand champion Jersey cow, while Grace Fayne Buttergirl won first in her class against strong competition.



This "Warning Signal"

Insures proper speed on every NEW De Laval Cream Separator

Nine people out of ten turn the separator handle too slowly.

Thousands of tests with experienced separator operators show this to be the case.

Other tests made by the high authorities have shown conclusively that there is a big cream loss when the cream separator is not turned fast enough.

You will avoid such a possible cream loss if you buy the New De Laval. The Bell Speed Indicator on the New De Laval is a "warning signal" that insures proper speed at all times. No matter who runs your De Laval, this "warning signal" will tell you when the speed is not right. You hear it and do not need to see it. This one feature alone may easily save you the cost of a cream separator in the next few months.

But that is only one of the big advantages of the New De Laval. Other advantages are greater capacity, closer skimming and easier turning, simpler bowl construction, and easier washing.

Why not see the nearest De Laval agent at once? If you do not know him, write to the nearest office for any desired information.

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50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

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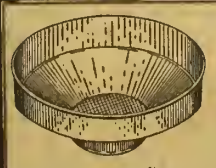

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The Farm Home

MRS. H. T. FRENCH

Questions about home problems promptly answered by letter and thru the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

TO LET the readers of the Home Department know that we are anxious to arouse enthusiasm; to awaken ambition; to guide this enthusiasm and ambition into practical and worthy effort; to encourage mutual sympathy and helpfulness—this is the sincere aim of this humble little department. May we not have the hearty co-operation of our wide-awake readers?

Write us; criticise us and help us by your suggestions. Ask for what you want—and help us to answer.—Editor.

Only a Home-Maker

A group of club women were discussing the various professions and one asked of a motherly-looking woman who had taken little part in the conversation, "What is your vocation, Mrs. Bond?"

The answer came quietly, "I am only a home-maker."

"A home-maker!" replied the first speaker, and asked if she would mind telling what she meant by the words. She answered smiling, "Only, that my time is so occupied with domestic duties that I have little to devote to outside interests."

Many of the club members were in the same position and felt that they had little time for broader work in the outer world after the duties of the fireside were carefully fulfilled.

On every side came expressions of regret that the work of the home tied many of these women too close to their individual firesides and made it impossible for them to write and teach, or to work shoulder to shoulder with the men doing their part to "broaden life."

Mrs. Bond listened and when many had spoken of their ambitions and discontent, replied: "I once felt as you do; but I had not yet considered the power that lies with the home-maker."

Everyone looked at her in surprise as she continued:

"The backbone of the nation is the home. The youth of today who is to be the man of tomorrow needs a loving hand to guide and direct him. My mother taught me the importance of right home influence by her own lovely example. She always made home the pleasantest place in the world for us, never hesitating to make unselfish sacrifices that our interests might be conserved."

The speaker continued to tell how children when young should be encouraged to have their fun in their own home, with the company they want, the parents thus becoming acquainted with the children's friends and helping them choose the best ones.

This mother gave up her spare room because one of the boys took to carpentry and needed a space to build boats in; and here under her own eyes her boy was training eye and hand, learning patience and the value of application as well as being kept busy and happy.

She also told how the nursery had been turned into a gymnasium. Physical training was encouraged, books on the subject were read and every possible help given that the children might learn how to keep clean and well trained, and have a safeguard against future temptation.

We may be sure that in such a home the older members of the family were not forgotten. We picture how, when they came home from work, rest and amusement were provided and home seemed like a very heaven to them.

There are surely many such homes where young and old read aloud, play games or have a family musicale. The mother herself has kept up her music enough to play for the boys and girls in their games and dances, and with the neighbors joining in now and then there are many happy gatherings.

After all, it is not because of the pitiably small, narrow, restricted circle of interests just beyond the necessary routine, that women's lives are so lacking in richness or so wanting in joy. Mothers are too liable to fall into the rut of the commonplace. Why need she do this? Is she not her own mistress? Mothers, make the system more elastic. If the task is too heavy for today, let it wait for the morrow. Plan judiciously that hours may be gained here and there and cares be lessened. Housework properly planned is conducive to health and strength. There is nothing like it to round out the arms and develop the chest. It brings muscles into harmonious action, gives color to the cheek and brightens the eye. The home is woman's sphere; it is her own place for "sweet ordering, arrangement and decision."

Someone has said that it is her special office and function to make and keep it fair and beautiful for her loved ones; hers, "to feed them in dainty ways," to clothe them, to keep them orderly, and to teach them in growing up to cleave to all lovely and seemly things.

Then let us not permit these duties to become dull and dreaded tasks; but joyfully throw ourselves earnestly and enthusiastically into our work, for—

"The common problem, yours, mine, everyone's, is not to fancy what were fair in life provided it could be—but, finding first what it may be, then find how to make it fair, up to our means; a very different thing."

"Whenever a woman's house shall be her palace, her pride, her delight, she will not be the victim of ennui or vanity or ambition or discontent."

MARCH MENUS

A few years ago Edna Ruth Granger, age 13, of Pueblo, Colorado, sent the following to the American Kitchen Magazine and received first prize.

Breakfast

Sliced Oranges and Bananas
Cream of Wheat — Cream
Chipped Beef (creamed)
Graham Wafers — Coffee

Dinner

Roast Spare Ribs — Baked Potatoes
Stewed Tomatoes — Lima Beans
Pickles
Suet Pudding — Coffee

Supper

Tomato Soup — Brown Bread
Quince Marmalade — Hot Ginger Bread
Cocoa

NOTES

Breakfast.—Oranges are tart and are very good for a breakfast when meats are served. Chipped beef is nice for luncheon; if any be left over, cream it for breakfast. Some cereal is generally prepared for breakfast, to my taste let it be cream of wheat. As oranges or bananas are served first, graham wafers are nice for the finish-

Everything Tastes Better on the Farm

—everybody knows a farmer's wife has a "knack" for making things that taste great.

Why not add to your reputation by using Calumet Baking Powder? There's something about the taste of goodies made with Calumet that makes folks want to eat 'em all day long.

Give more serious thought to your Baking Powder. Try Calumet—follow the directions on the can. New bake-day results will be yours.

Calumet means greater economy, no loss of materials—big, light, flavory bakings—absolutely pure foods and the *same* success *every* bake-day.

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Received Highest Awards

New Cook Book Free—See Slip in Pound Can

Europe's many tongues and consequent misunderstandings

The Fruits of Understanding

Throughout the vast area of this country prevails a common tongue. The whole of Europe hardly exceeds our territory, yet Europe has more than a score of nationalities and many different languages.

In the United States the telephone, as exemplified by Bell System, renders a matchless service in its mastery of distance and in encouraging the use of a universal language. This accomplishment is in spite of the great influx of population from every country in the world.

In Europe the independent countries, separated by barriers of language, and lacking efficient telephone service, suffer from inadequate facilities for inter-communication.

We now talk from the Atlantic Coast to the Pacific, and eliminate more than three thousand miles. In Europe, contending with a babel of voices and unrelated telephone systems, a bare quarter of that distance has been bridged with difficulty.

The ideal of the Bell System has been day by day to extend its service in the interest of all telephone users. Its efforts have resulted in providing the facilities to unite cities and rural districts in true American democracy.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy *One System* *Universal Service*

Enjoy a GRAFONOLA at Our Expense

Send for our big FREE Catalog and see just which style you want. Choose your records from a list of thousands. We'll send the outfit on FREE TRIAL—NO MONEY DOWN. Return it after trial if not satisfactory. EASY TERMS if you keep it. *Mention this paper when you write.*

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SUGAR, 19 lbs. $1.00

With each $10.00 grocery order. Save money by buying your sugar, groceries and many other lines of merchandise of the fastest growing mail order house in the west. We carry full and complete stocks in Omaha and sell direct to you at wholesale prices. Write for our money-saving Grocery Catalog and new Big Book of Bargains. They're free. Just mail a postal today. General Mercantile Co. "The Great Mail Order House."

727 S. 9th St., Omaha, Neb.

ing of the meal, as fruit twice for this meal would be too much.

Dinner—Spare ribs answer the question for meals for dinner. Baked potatoes are good with roast meats. Stewed tomato and lima beans are nice side dishes.

March is a hard month for preparing vegetables, as green vegetables are high in price, and for the average family canned goods are generally selected. Pickles are served with any fat meat. Suet pudding is a good desert and if any is left, put it away. It keeps as well as fruit cake.

Supper.—Tomato soup made from the tomatoes left from dinner. Brown bread with soups is nice. Quince marmalade is nice with brown bread. Hot ginger bread and cocoa are good for luncheons.

Note: Should the young woman whose name appears at the head of this article, still live in Colorado, we would be pleased to hear from her and of her interest and progress in the field of home-making.—Editor.

A demonstration of soups without meat—

General Rules

These soups are thickened with butter and flour to prevent the separation of the thicker and thinner parts of the soup; the butter is heated until it bubbles, the flour and seasoning added and enough hot milk or stock added to make a smooth sauce—this formed the foundation of the following puree and mock bisque—the third demonstration being that of a fruit soup.

As an illustration which is always worth more than a whole afternoon of talk the following recipes were tested:

A pint of left-over peas were put through a sieve and added to the white sauce and seasoned to taste. This made a very appetizing and pretty green soup or puree of peas as such soups are called. It takes its name from the puree of which it is made, being also called cream of beet, cream of rice, etc.

To the white or cream sauce in another chafing dish was added a pint of tomatoes (to which when hot had been added a little soda to neutralize the acid) and the Tomato bisque (Mock Bisque) was ready to serve. This soup being pink in color suggested another color scheme.

The fruit soup was made as follows:

1 pt. grape juice.
½-pt. hot water.
1 level tbsp. arrowroot (or cornstarch).
½-pt. cream.
1 doz. blanched almonds (cut in thin slices).

Directions—Heat juice and hot water, add arrowroot that has been mixed with a little of the cream. Stir until thickened and very smooth. Add hot cream slowly and then pinch of salt and nuts. This is very pretty to use at a violet luncheon.

The soups must be served as soon as cooked and in hot dishes.

Crisp crackers, croutons or soup stocks may be served with these, also slices of lemon. A seasoning of white pepper and gratings of nutmeg may be used.

An Irrigated Garden

Generally the kitchen garden is the item which receives least attention on the Western farm, so I want to tell what I did with a little patch of ground about 25x40 feet in size.

I bought $3.00 worth of seed and balanced that by selling $3.00 worth of tomatoes, cabbage, pepper and celery plants. I crowded my garden, planting everything much to close, or I would doubtless be able to show better results. One 5c package of "Earliest of All" cucumber cut 13 gallons of small pickles, plenty to eat and a few to sell or give to neighbors. One oz. Prizetaker onion harvested 1½ bu. winter onions besides about 1 bushel left in ground because they started to grow again, due to late irrigation. Another year I shall transplant, as the yield was very uneven, due to crowding and vacancies from irregular germination.

A 5c package Alaska Peas were in bloom when the last spring snow fell; did splendidly, furnishing an abundance of fine table peas. Another year shall plant 2 lb. Alaska, 1 lb. American Wonder, 1 lb. Telephone and can the surplus Alaska yield. Late peas, Champion of England, did not do so well. Planted 2 lbs., canned one dozen quarts and had peas for table from time Alaskas died till late.

A 5c package of Golden Bantam corn gave a fair supply of delicious very early roasting ears, ½ lb. Country Gentleman yielded sufficient for table use till frost, three dozen quarts canned and two gallons cut and dried.

A 5c package of Golden Bantam corn gave a fair supply of delicious very early roasting ears, 1½ lbs. Country Gentleman yielded sufficient for table use till frost, three dozen quarts canned and two gallons cut and dried.

Celery required a great deal of care and was not worth the extra work. Sold $1.30 worth, used all we could in cooking and lost about 150 stalks because the ground was so dry and hard to dig. I did not trench it properly nor even remove all from the garden.

A 5c package of an early flat cabbage (Volga) yielded: Plants, 75c; cabbage sold, 50c; kraut, 5 gallons; piccalilli, 2 gallons, and 25 heads for winter.

Detroit Dark Red Beets made one dozen jars of dark red pickles, plenty for table, and two pecks sold.

Early White Egg Turnip furnished early tame greens (with beet leaves), plenty for table all summer, and two pecks sold. A mixture of turnip and beet beet leaves makes excellent and very greens for those who distrust the wild greens, or never having been properly introduced, hesitate to take up with them on the highways or byways.

Okra bore freely but pods small.

I planted two pounds Davis White Wax, two pounds Bush Lima, one-half pound Mexican Brown beans. Sold thirty pounds string beans, shelled three gallons Lima, two gallons White Wax and three gallons Brown beans for winter and used a great many, as we are very fond of string and green Lima beans. Another year shall only plant one-half pound White Wax and plant instead a Navy or Teppary bean for winter use.

My tomatoes were too crowded and did not do themselves justice. I canned four dozen quarts, two gallons catsup, two gallons piccalill, sorted out two and a half bushels nice large green ones to ripen in cellar when frost came and gave away about two bushels green ones.

I put out forty plants and sold the rest. Gathered 175 peppers, of which I sold ten dozen, baked or made mango pickles of rest.

Of course there was lettuce and radishes. I found White Icicle rather the finest and most crisp.

Here is what I learned from my garden. Chickens and garden are very incompatible. In order to have luck with both one must be carefully fenced with woven wire. I prefer to fence the garden, as I never found it to be much of a rustler.

Onions can easily be ruined by late irrigation. Put them where water need not run when the late bearing crops are irrigated in the fall. Cucumbers, tomatoes, peppers, cabbage, etc., which bear till frost, are most easily irrigated if planted near to each other. Early peas also planted near can be cleared away in midsummer and fall turnips sowed.

It is entertaining to study seed catalogs in the winter and quite likely to result in a more satisfactory garden than is buying a few packets of garden seed with the other groceries along in April or May.

When the canned and green groceries are eliminated from the grocery order, from the time your garden shifts to "high" until you fail to plant another the well known H. C. of L. takes a gratifying drop. And, believe me, those who have grown a varied and satisfactory garden seldom fail to plant another.

AMATEUR FARMERINE.

(NOTE—This garden is located at Rocky Ford, Colo.)

Washington and the Telephone

Can you imagine "the Father of his Country" using a telephone?
Can you fancy his friends calling him by telephone on February 22nd to wish him "many happy returns of the day"?
How greatly comprehensive telephone service would have multiplied Washington's ability at the head of the Continental Army! How it would have simplified his duties as the chief executive of our new-born Nation!
The telephone is still young, but it serves the public to an extent that would have been beyond the conception of Washington's day and generation.
So intimately has the telephone won its way into the very lives of the people of today, that a general cessation of the service would be nothing less than a national calamity.
By the way, has it been noticed that while every other commodity has been steadily raising in price, and while the cost of materials required in the furnishing of telephone service is constantly increasing, telephone rates in general have remained the same?
Gradually the margin between our total revenues and our operating costs has narrowed until the lines are too close for comfort.
Washington was a servant of the public but he was never confronted with the problem of conducting a public service with a fixed rate of income, and trying to make this balance with steadily increasing costs.

The Mountain States Telephone and Telegraph Company

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Barteldes offers magnificent varieties of Sweet Peas. No garden is really a garden unless you have a number of these beautiful blossoms. The famous Spencer varieties have immense flowers. Large wavy standards and long drooping wings. Numerous varieties in our big **FREE CATALOG.** Send for it at once—contains 160 pages filled to overflowing with field, garden and flower seeds of quality and low prices.

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All Patterns 10c Each

We can supply our readers with high-grade perfect-fitting, seam-allowing patterns at 10c each, postpaid. Full directions for making, as well as the amount of material required, accompany each pattern. When ordering, write your name and address plainly, tell us the correct number and size of each pattern you want. We agree to fill all orders promptly and guarantee safe delivery. Address all orders to WESTERN FARM LIFE, Pattern Department, 14th and Arapahoe, Denver, Colo.

1993—Good School Dress. Cut in sizes 4, 6, 8, 10 and 12 years. Requires 3¾ yards 44-inch material for 8-year size. This model is nice for serge, gabardine, velvet, taffeta, linen, percale, galatea, sheperd check and plaid suiting. In brown or blue serge with a collar of white repp or linen, it will be very pleasing. The fronts have square yoke portions.

1617—Smart Frook for the Growing Girl. Cut in sizes 12, 14 and 16 years. Requires 5½ yards 30-inch material for dress and 2 yards for bolero for 14-year size. Cream challie with a pink floral design and pink faille for bolero, is here combined. The model is nice for batiste, lawn, crepe, tulle, silk, voile, nun's veiling, net or chiffon. The Empire waist is especially pleasing and girlish. The dress will be lovely for party wear. The bolero is new and attractive and could be made of embroidery or lace.

1978—Simple Dress for the Little One. Cut in sizes 2, 4, 6 and 8 years. Requires 2½ yards 36-inch material for 4-year size. This is a splendid model for serge, percale, voile, gabardine, galatea, albatross, lawn, gingham and chambray. The front is full in panel effect, and the fullness at the waist line is held by a belt.

2002—Good Suit for the Small Boy. Cut in sizes 2, 3, 4 and 5 years. Requires 3¾ yards 36-inch material for 4-year size. Serge, cheviot, corduroy, linen, seersucker, percale and galatea are good materials for this model. The fronts are double-breasted and the revers collar may be omitted. The trousers are straight.

1985—Popular, Practical Garment. Cut in sizes 34, 38, 42 and 46 inches bust measure. Requires 3¼ yards 36-inch material for 38-inch size. Cambric, lawn, batiste, crepe, silk and linen are nice for this style. The drawers portion may be finished in knickerbocker or straight effect.

1998—Dress for Misses and Small Women. Cut in sizes 16, 18 and 20 years. Requires 6½ yards 36-inch material for 18-year size. This model has a collar in two outlines, so if one does not care for the broad effect, the narrow outline may be especially pleasing. The dress has a fitted body lining to which the skirt is gathered. The outer waist may be finished separately or tacked over the lining.

WESTERN FARM LIFE SEWING MACHINE

Costs less than half the price of other machines. Sold on a money-back guarantee basis. We pay the freight and allow 90 days' trial. Send for FREE machine book; describes our machine in detail and explains why you had just as well save from $30 to $35 when securing a good machine. WESTERN FARM LIFE, Denver, Colo.

You had better hurry if you want to examine a copy of Practical Farming, the unusual book on farming and stock raising that we have been telling you about. If you have not inspected a copy look up the free inspection post card we sent you or a free inspection coupon in recent issues of Western Farm Life. Fill it out and mail at once. There are only a few copies of this valuable book left. Address circulation department, Western Farm Life, Denver, Colo.

Profitable Farm Poultry

W. E. VAPLON

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries Poultry Department, Western Farm Life, Denver, Colorado.

We wish to tell you that we are greatly appreciating your articles in the Western Farm Life. At a time when so many new ideas are crowding themselves upon the inexperienced in poultry raising, it is indeed a comfort to he taken hack to the common sense track. We also thought we had the problem of winter eggs nicely settled, hut here we are confronted hy the experiences of a neighbor whose pullets hegan laying in September, 1916, but were moulting in November and are still keeping it up. There is another case where May pullets hegan moulting in September, 1915, hut when over the moult, laid all winter. I think the latter were poorly fed, which may have brought about the early moulting. The hirds in both cases were the White Leghorn. Now, do you think it advisahle to feed the chickens poorly in the fall in order to hring ahout the early moulting to he sure of winter eggs? Would also like to ask how many males would he required for a flock of forty hens, in order to render the eggs fertile?—Mrs. A. S., Ouray, Colo.

Forced molting of fowls has not been found profitable. A bird in the hand is worth two in the bush and one is likely to lose by cutting off the egg yield of today in hopes of more eggs tomorrow. It is a good plan in selecting stock that are to be kept over during the winter, to dispose of the early molters and keep those which lay during the late summer and fall, even tho these late molters do not begin laying until late winter. To be sure of winter eggs, one must mature his birds before eggs are wanted. The pullet is the solution of the winter egg problem. Molting of pullets in the first year is usually the result of too early hatching, tho in many cases it may be only because of precociousness in the pullet. March and April pullets should not molt in the fall except in a few individual cases. If your hens are on free range, two males will be plenty to run In the flock of forty. The same number will likely do in the inclosure if one of the males is kept cooped up alternate days.

The Farm Flock

Will you tell me how to huild a chicken house large enough for ahout two hundred chickens? Just the cheapest, smallest that would he practical. What variety would you suggest for a farm flock here in Baca county? Think I would like the White Orpington. What do you think of them? We have a sorry hunch of Rhode Island Reds and would like to make a change. Can you tell me where to get eggs from good, pure stock at reasonahle prices, and what is the right time to hatch to have "mature pullets" for winter layers? We use an "Old Trusty Incuhator" (120-egg) and have heen very successful in hatching and raising chicks, hut so far have not made provision for them in winter. We have always raised chickens without any trouhle, hut want to give them more time and thought next spring and get a flock to be proud of so that we can help hring up the standard of chicken-raisers among our homestead neighhors.—E. J. R., Lamport, Colo.

Under separate cover we are sending you a poultry bulletin which will show two or three types of poultry houses which have proven good in Colorado. The underground house shown on the cover is meeting with favor in the dry land sections. All the conditions necessary for successful housing are provided for in this house and the expense of building is limited almost entirely to the cost of the roof. We would not consider a house large enough unless It furnishes about three square feet of floor space to the hen.

If you have a flock of Rhode Island Red hens and they are healthy and vigorous, rather than make a change, we would advise grading up your flock by the introduction of pure bred Rhode Rhode Island Red blood. Within two or three years you will find a marked improvement in the color and size of the flock and in the long run you will find it hard to beat the Reds for your purpose.

You might make a breeding pen of a dozen or more of your best hens, using the eggs from this pen for hatching, and in this way get a fairly good start the first year.

The White Orpingtons are a good fowl, but being considerable larger they are not usually considered so profitable on a farm. You will find that they require a month or two longer for maturing, which is quite an item in Colorado, where the summer season is short. March and early April is the best time for hatching chicks of the Reds or Orpingtons. Early hatching, good care of the growing stock and comfortable housing, with a variety of feeds in winter, will insure a fair number of high priced eggs.

Pullets Won't Lay

Will you please tell me what is the matter with April, May and June hatched pullets that have started to lay and then stop? It seems they lose their feathers around the neck. I feed oats in the morning, two handsful to each thirty pullets. Eight pounds of wheat in litter for every hundred pullets. Feed 5 pounds of mash to every hundred pullets; in the evening 1 pound of heef scraps to every hundred pullets. —L. J. K., New Mexico.

In our climate there is little danger of April-hatched pullets molting during the first year of laying. Is it not possible that your pullets have not finished the chick molt and have never been fully feathered? Generally the neck is the last place to show full feathering. At any rate your feeding method is not to blame, and we are of the opinion that probably but few of your pullets hatched as early as April and May have molted since laying. If this is general in your flock we are at a loss to account for it. In Colorado we have trouble to get our April pullets to lay before cold weather, and are not at all troubled with the molting at this time.

Liver Complaint

Can you tell me what is the matter with my chickens? I have lost about fifteen hens in the last six months. They all seem to die with the same disease. The most of them go lame, the liver is very much enlarged, and covered with yellow spots, and in some cases entirely decomposed. Can you tell me what the trouble is and what to do for them?—C. W. H., Wyoming.

Your hens are doubtless troubled with liver complaint, which is a disease somewhat similar to chronic indigestion. Give them one-tenth of a grain of bichloride of mercury in one gallon of water or fifteen drops of nux vomica in a quart of water and give them access to plenty of grit. You should see that they do not have access to any other water. The above remedies are poisonous and care should be observed in handling them.

Consolidated Schools Solve Rural Life Problem

Continued from Page 4

satisfaction to all that patronize them.

The old schools were "one cylinder" affairs, running on flat tires, with lights nearly out, with a leak in the gas tank, and were never known to exceed the speed limit. Let us say to their credit that they served their day and generation the best they could, but they are now "old models." These new consolidated schools are the latest models. Some are four-cylinder machines. Some are "sixes" and some are "super sixes." They are equipped with the latest and best devices for doing the best kinds of school work. They have been built, equipped and manned to the interests of the country boys and girls who, in them, are receiving their training and preparation for twentieth century citizenship.

In these schools 3,202 country children are getting a real taste of real country life. Four years have been added to their home life and their school life. For now they may attend a good school for twelve years and return each evening to gladden the hearts of their parents, and themselves receive the protection of the parental roof, instead of dropping out of school after or before finishing the eighth grade, as most country children do, or instead of being compelled to leave home in their early teens to board among strangers while they get a high school education that unfits most of them to return to their homes after they have gotten it.

Jimmie giggled when the teacher read the story of the Roman who swam across the Tiber three times before breakfast. "You do not doubt a trained swimmer could do that, do you James?"

"No, sir," answered Jimmie, "but I wondered why he didn't make it four and get back to the side his clothes were on."

Sure Hatch Chicks Make Money

They thrive and grow. They are born healthy and strong. Many owners make 1000% profit yearly. Machine is simply and easily operated. The wife or the children can run it. The Sure Hatch Incubator lasts a lifetime.

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19 Years' Experience

has taught us how to build this superb incubator that hatches fertile eggs into healthy chicks. No losses from poor incubation. Hatches in cold weather. Requires only a little space. Just a corner anywhere around the house. An ornament to any room.

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PAYS IT'S WAY

You get your money back and a nice profit too from the Sure Hatch in a few weeks. Be on the safe side, Sure Hatch Chicks are strong and healthy; that's the kind you must have to succeed.

BIG CATALOG FREE

Do not send stamps or money, just a postal with your name and address. We will send you our big, interesting and valuable Sure Hatch Catalog. Pictures and describes fully the Sure Hatch. Shows the photographs of many owners. Maybe some of your friends are there. Gives the secrets of successful Chicken Raising and Poultry Profits. Tells all about our Generous Offer of Free Fixtures. Free Uncle Sam Poultry Book and Freight Paid. Send that postal to us today. Early hatches pay best.

THE SURE HATCH, Box 51, Fremont, Nebraska

"Sure Hatch Chicks Make Sure Profits"

Did You Have "Good Luck"

With Your Chicks?

"Luck" with chicks starts with the incubator. If it is properly heated, properly regulated, and properly ventilated, your chicks will start off with vitality. They won't come out of the shell half dead. So many people trust their eggs to a cheap machine, forgetting that it is not only how many you hatch that counts, but how many live and grow.

Start Your Chicks With a Queen Constitution

The Queen has a reputation for hatching strong, healthy chicks. It is built of genuine Redwood—very scarce in these days of cheap substitutes. Redwood does not absorb odors from the hatching eggs. Cheaper woods, and pasteboard lining in iron and tin machines, retain the odors to weaken and kill the hatching chicks.

Queen incubators are not cheap, but they are built to hatch big hatches of chicks that live. Book sent free.

Queen Incubator Co., 1179 N. 14th St., Lincoln, Nebr.

INCUBATOR PRICES SLASHED!

Buy at lowest cost this big hatching, even heat "KING" Incubator—Double walls of solid Redwood, copper hot water heater, automatic regulator. Only one of hundreds of bargains shown in our big FREE catalogue. Send for it.

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Poultry Book Latest and best yet; 144 pages, 216 beautiful pictures, hatching, rearing, feeding and disease information. Describes busy Poultry Farm handling 58 pure-bred varieties. Tells how to choose fowls, eggs, incubators, sprouters. This book worth dollars mailed for 10 cents.

Berry's Poultry Farm, Box 66, Clarinda, Iowa

Raise Every Chick

Feed your chicks properly at the start and *you will raise them.* Millions of baby chicks die each season because they are not fed "baby food" especially suited to their needs. We guarantee that

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will safely carry your baby chicks through the critical first three weeks and make them big and strong. Then you can bring them to maturity.

Pratts Baby Chick Food is a correctly-proportioned, balanced ration for baby chicks. It contains cereals, animal food and mineral matter to build flesh, feathers and bone. It completely nourishes the chicks—gives them a strong start—prevents chick troubles due to improper food and digestive disturbances.

Our dealer in your town has instructions to supply you with Pratts Preparations under our square-deal guarantee—*"Your money back if YOU are not satisfied"*—the guarantee that has stood for nearly 50 years.

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Write for FREE copy of "Baby Chick Book"

PRATT FOOD COMPANY

Philadelphia Chicago Toronto

Pratts

BABY CHICKS——EGGS FOR HATCHING

HIGHEST QUALITY AND THEN THE LOWEST PRICE POSSIBLE. WE ARE THE LARGEST BREEDERS OF IMPROVED STRAINS PURE-BRED

Single Comb White Leghorns

In Colorado. All eggs or chicks from our own matings on our own farm, hatched by experts. You take no chances; safe delivery guaranteed. Colorado climate poultry will give your flock a new lease on life that cannot be had in any other way. Send for catalog. It illustrates and describes all.

Merk's Poultry Farm, Box L, Rocky Ford, Colorado

TOM BARRON STOCK—282-EGG BLOOD

That is the dam's record of male in pen No. 1, imported from Barron's plant in December, 1915. Our strain of Leghorns lay and pay. They make money for us; they will for you.

DAY-OLD CHICKS——EGGS FOR HATCHING

From strong, healthy range-raised stock—sure winners at the egg basket. If you want eggs and profit get the bred-to-lay kind—tested 7 years. Our prices are very reasonable. FREE CATALOG. Send for your copy—do it now. Satisfied customers all over west.

FOWLER EGG FARM **Fowler, Colorado**

HALL'S S. C. R. I. REDS AND WHITE PLYMOUTH ROCKS

show their quality by winning at the Great National Western Poultry Show, Denver, where only the best from the earlier shows are exhibited. Our strain combines the heavy egg-laying and exhibition qualities. Eggs from our utility pen of S. C. Reds $1.50 per sitting, $8.00 per 100. Eggs from exhibition pens $2.00, $3.50 and $5.00 per sitting. Eggs from our strain will strengthen your flock. Write for mating list.

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STOCK YARDS STATION, DENVER, COLO.

16 more different Foods for Poultry, such as Granite Grit, Charcoal and Oyster Shell. Remember the Soil—Replace the losses by using our Blood of Bone Fertilizer

SELECT TANKAGE FOR HOGS **HIGH PROTEIN MEAT SCRAPS**

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At last a poison has been developed that these destructive pests will eat at any time of the year, regardless of other food present.

It is guaranteed to kill.

The Acme is prepared according to the formula that has been used so successfully by The State Entomologist at The Colorado Agricultural College to clean up thousands of acres of the worst infested land in the West.

The Acme was developed under scientific conditions and the material is prepared under the directions of the originator.

It is ready to use, keeps indefinitely, and is harmless to handle.

Write for prices; do it now.

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For Fattening Stock. Use the great forage crop—nothing better for feeding, wintering and fattening sheep and stock. Very hardy—no fear of rotting in the ground. Does not exhaust the soil rapidly like other crops. Acts as a fertilizer—puts nitrogen in the soil. We have big stock of fresh seed for sale at low prices. Write at once for full particulars, prices, how to sow and harvest, etc.

THE BARTELDES SEED COMPANY,
2032 Sixteenth St., Denver, Colo.

Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and thru the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Not Contagious

Would like to know what is the matter with my milch cows. One had a calf last fall and one early last spring. One cow's udder caked and gave bloody milk. Bathed it in hot water and got the cake out, then in two weeks another udder caked, but did not give bloody milk. Treated it the same way and it seems all right. Now we have another one that is the same, but don't know how it will come out. Would like to know if it is a disease and contagious and what we can do to prevent it? They have been getting clover, timothy and wild hay mixed to eat.—J. M. J., Troublesome, Colo.

The trouble is probably brought on either from the effect of feed or carelessness in drying up the cow. Feed something of a laxative nature and when drying up the cow, be sure that the work is done carefully.

Disking Timothy Meadow

Is it possible to disk a timothy meadow the same as one does an alfalfa field either in the fall or spring without doing any damage to the stand of timothy? I have a field of timothy which has always been used for pasture, but I wish to keep stock off it and cut it next summer and I have been wondering if a good disking might not help it. Also will you tell me if it is possible to cut two crops of timothy from the same field in one year?—A. E. B., Edgewater, Colo.

A timothy meadow can be disked in a similar manner as an alfalfa meadow. It is questionable, however, whether it pays to disk a meadow of long years standing. It is probably better to plow it up, rotate the crop for one season and then reseed. If you decide to disk it, it would be well to sow additional seed so that you will get a better stand. It is seldom that the second crop of timothy develops in this country. You might get a partial second crop by cutting the first crop early and irrigating freely, but it would be better to let the second crop grow for pasture and for winter protection.

Field Peas

I would like to know just what the meaning is of mountain or field pea and if there is any other name for them? Where can I obtain seed? Will they grow on sod or new land? This altitude is one mile high. Sandy loam with granite formation.—R. M. S., Prescott, Ariz.

Write the Agricultural Department, Washington, D. C., for circular 690, "The Field Pea as a Forage Crop." This will give you full particulars. The field pea is a stock pea in a similar way as the cow pea and soy bean are cultivated exclusively for stock purposes in the South. The Agricultural Department gives eleven varieties of stock peas. The stock pea is usually smooth, while the garden pea is wrinkled. The field pea is grown for forage and feed for stock purposes, while the garden pea is grown for table use, but in many instances is also grown for stock. You should be able to grow field peas profitably at an altitude of 5,000 feet or over, but the crop does better in an altitude between 7,000 and 8,000 feet, where the nights are quite cool. They will grow all right on sod land if the seed bed is well prepared.

Killing Ticks

Would like to know what will kill ticks in calves ears and keep them out. I have put lard in calves ears, which will cause them to leave, but would much prefer mixing something with the lard that would kill the ticks.—Chas. Heinlen, Kansas.

Use one part Creolin in sixteen parts water and apply to the affected parts. Do not allow liquid to run down in ear.

Dried Beet Pulp for Dairy Cows

(1) Do you consider dry beet pulp a good feed for dairy cows?

(2) What is its value as a feed for dairy cows as compared to alfalfa at $8 per ton and corn at $2 per cwt?

(3) Is it bulky?

(4) In what shape is it put up?—H. B. F., Delta, Colo.

Dried beet pulp is put up in sacks of about 100 lbs. It is about as bulky as well-packed wheat bran. Dried beet pulp cannot be substituted for alfalfa hay as it is a carbohydrate feed and as such falls in the same class as corn.

At the Massachusetts Experiment Station it was found that 4.3 lbs. of dried beet pulp equals to the same weight of corn when fed with a basal ration of 2 lbs. wheat bran and 0.7 lbs. cottonseed meal and 17 lbs. mixed hay for milk production. In Michigan dried beet pulp was found to compare favorably with corn for fattening sheep and steers. Dried beet pulp if fed in proper combinations and quantities is a good feed for dairy cows.

Lumpy Jaw

I have a well bred milk cow two years old, first calf died. Cow has got what I think is big jaw or lumpy jaw. Can I make any use of her milk? Will it be safe to feed to pigs?—W. J. M., Utah.

You should not use the milk for domestic purposes, but it is all right to feed to pigs.

Goose or Gander

Could you inform me of some reliable way of telling a goose from a gander, in both young and old stock? I have been told that the fat in the gander falls in one "V" while in the goose it falls in two. However, this will not apply to the young, nor to a goose which is not fat.—W. E. T., Jefferson, Colo.

The sex can be determined among young goslings largely by the form of the bird. The male is larger, coarser and more masculine. He has no difference in the sound of his voice from the female. As the birds become older the gander can be told from the goose not only by his coarser and larger frame and more masculine appearance, but also by his voice. He will have a hissy or more dead sound to his voice than the goose, which has a shrill, sharp tone. There is nothing in the supposition that the fat in the under part of the birds takes a certain shape in the different sex. About the head the gander will have a rather high, fixed head and sort of protrusion over the eyes and a larger, flatter beak. Until geese reach maturity there is always some doubt as to the sex. They are probably harder to determine than in the case of any of our other domestic fowls.—Prof. Anderson, Colo. Agricultural College.

Owner Can Remove Improvements

There are 40 acres that join me. Would I have to move on it if I filed on it? I am on my homestead and have patent for same. The man that filed on it has never lived on it. He filed on it about six years ago and another man tried to file on it and built a fence and house, then was notified that there were other filings ahead of his. He has moved off the place and does not do anything on it. If I can contest and get it will I have to pay this second party for his fence and house, or can he take them off the place?—B. E. T., Steamboat Springs, Colo.

(1) This depends on the character of your homestead. If it is land similar to that described in the enlarged Homestead Act of February 19th, 1909, you would be allowed to take the adjoining 40 acres without being required to live on them.

(2) The party owning the improvements on the forty acres has a right to remove same or dispose of them as he sees fit. You will not be required to pay for these improvements, but can purchase them if you desire.

Garnishee the Money

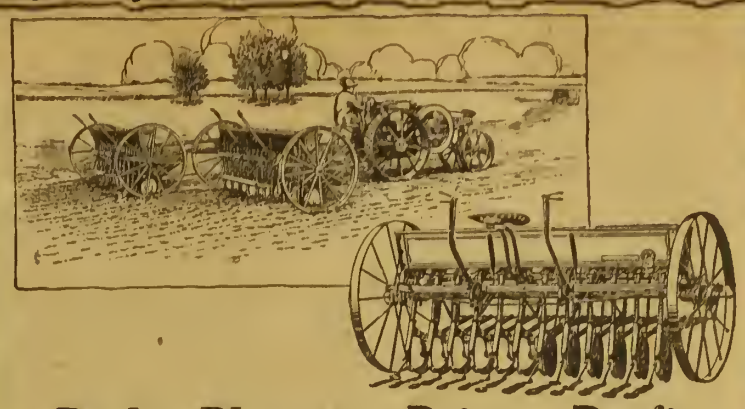
I am sending you a copy of a lease and would appreciate any information you can give me on the subject.

A and B lease land to C, C subleases to D. C tells A and B that he will not pay the lease because D agreed to pay it. Now E owes C enough to cover the lease. Can E pay A and B the lease money out of what he owes C without the consent of C? C violated the contract when he subleased the land.

E has no interest in the deal. What I wish to know is, whether or not A and B can collect the lease that way. E is willing to pay the money to A and B if it can be done legally.

Basing our opinion on the facts as you state them, which are rather meagre, we are of the opinion that E cannot pay to A and B what C owes on the lease without the consent of C.

The proper thing for you to do is to start suit and garnishee E in court.



Right Planting Brings Profit

IF you are growing small grains for fun and not for the most profit, plant your seed any old way. But if you want every dollar of profit you can get, plant your seed right. Use an **Empire Jr., Hoosier,** or **Kentucky drill.** Right planting is more important than many farmers think. It often means profit where the other fellow has to take a loss.

The local dealer who handles these drills carries the drill best suited to your work. With his advice you can choose a drill that will plant your seed in your soil and plant it so that you have a much better chance of getting a bumper crop than if you planted in some other way.

The arguments for **Empire Jr., Hoosier** and **Kentucky** drills are far too many to be told here. The dealer will show you all about feeds, furrow openers, bearings, attachments, etc. He will give you reasons for buying his drill you cannot ignore. See him and talk this over with him, or write to us and we will tell you all about the best drill you can buy.

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A AND C

CALF MEAL

Test It 30 Days at Our Expense

Let us prove that you can sell your milk for three or four times as much as Calf Meal costs, and turn your calf loss into a profit. Order 100 pounds through your dealer or direct. Use it 30 days. If you are not satisfied that it does what we claim, return unused portion and your money will be refunded. It costs less to feed than any other standard meal or home mixture. Contains all nutriment necessary to keep the calf in good condition. Promotes healthy growth of meat and bone. A little added to poultry mash will make chicks grow quicker and hens lay better. Call on your dealer or write today for free sample.

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Best Silo—Costs the Least, Too!

We can prove that the H-L-F Silo is the best silo made. It will last as long as any silo, no matter how expensive. It is a building rather than a barrel—can't shrink apart and blow over like a stave silo. And it will easily hold internal pressure that would crack cement or tile.

Costs less than other types because we sell direct from our big factory to you. Average saving is $100.00, compared with stave silos—and often twice as much.

Far Stronger and Air-Tight

Massive four and six yellow fir studs extend from top to bottom. Strong double wall of matched lumber makes silo everlastingly strong and tight, **and absolutely prevents air from entering and spoiling silage.** Eight strong hoops give extra guarantee of strength, and need never be tightened or loosened.

Last call for Free Roofs

You have just time to answer this advertisement, get the big folders and place your order before withdrawal of free roof offer.

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Don't wait another day to get the facts and figures on H-L-F Silo—find out why we claim it is **best** as well as **cheapest** for you. Mail the Coupon today.

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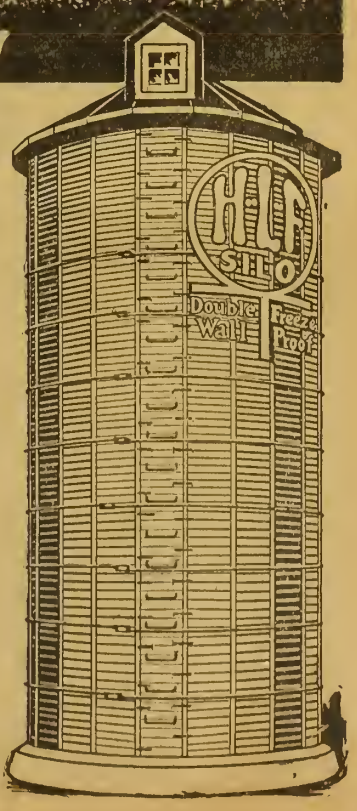

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The Grange

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Make the Grange Pay

REPORTS from different parts of the state show that subordinate Granges are fast increasing in membership, which numerically, materially strengthens the organizations. It is one thing to secure new members and quite another to hold them. It is a waste of time and energy to organize Granges just to organize. The farmer is a very busy man and as a rule cannot afford to leave his work to attend a meeting during the day and in the evening after he does his chores, is tired. There must be a special inducement before they will drive from two to seven miles to attend a meeting of the Grange. They naturally ask themselves the question "Will it Pay? Will there be anything of sufficient interest to justify me to sacrifice my rest and make the drive?"

The responsibility of making the Grange meeting pay rests largely on the lecturer, who should have interesting and instructive programs arranged weeks in advance. Never before has there been such a wide interest aroused in the science of agriculture and the study of state and national questions. Subjects for interesting debates are innumerable. In many of the bills introduced in our state legislature the farmers are directly interested. The State Grange went on record as favoring a local option herd law and such a bill has been introduced by Hon. A. H. Kramer, our state purchasing agent. This and other bills of interest to farmers should be discussed in meetings of Subordinate Granges and the attitude of the Granges on them made known to your senators and representatives who are your servants and who welcome your opinions.

The basic principle of the Grange is co-operation and if we want remedial legislation it is our privilege and duty to demand it. Copies of bills before the legislature can be had by writing your senator or representative.

Debates on live subjects are not only instructive but they also teach the speaker to think on his feet. Instruction in parliamentary ruling is a feature that should be taken up in the meetings by some speaker qualified to talk on the subject. Some of the more progressive Granges secure a speaker for every evening. There is frequently to be found some farmer or stock raiser in the locality who would give an instructive talk on some subject associated with general agriculture.

If active, the lecturer can always provide good programs and if not active, ask for his resignation and elect one who will make the "Grange Pay."

Grange News

The next session of Darden Pomona will be held at Broomfield with Crescent Grange, Saturday, March 10, 1917. Among the speakers will be Dr. H. T. French and Mrs. H. T. French of Colorado Agricultural college, Hon. G. B. Weir of Holyoke, and Hon. A. P. Ardourel of Boulder.

At the last meeting of Maple Grove Grange, Mr. C. P. Link of the State Tax Commission gave an interesting talk on taxation.

Riverdale Grange No. 187 held a large meeting February 10, when they gave the third and fourth degree to a class of 40 candidates. Maple Grove drill team conferred the degrees and gave an exhibition drill.

Grange Notes From State Secretary Rudolph Johnson

On February 15th Laird Grange was organized at Laird, Yuma County, by John Morris and Fenner D. Bullard, with 118 charter members.

A movement is on foot in El Paso county to organize a Pomona Grange, to operate among the seven Granges in that county. In La Plata county, where eleven Granges were recently organized, making thirteen in that county, there is also a prospect that a Pomona Grange will soon be organized.

West Plains Grange, near the Ne-

Continued on Page 23

Answering the Kerosene Question with a Guarantee

THE Rumely OILPULL tractor is not on trial in the Dry Farming territories and the best proof of its adaptability to their particular needs is the steadily increasing demand. It has shown its superiority as a dependable, efficient and economical power outfit for all kinds of work—ready to work when quick work counts and to prepare the seed bed at one operation if you want to.

The low cost of operating gives the OILPULL a big advantage over other tractors, because of its ability to burn the cheapest oil fuels. It successfully handles all grades of kerosene and progressive farmers don't need to be told what a cost advantage that is.

We, however, do more than merely claim that the OILPULL will operate on these cheap fuels. Instead of word-of-mouth promises, we give an absolute written guarantee—the kind of a guarantee that you are entitled to and should demand with the tractor you buy.

Remember, that the OILPULL is a tractor built to burn these cheap fuels and is not a makeshift combination gasoline proposition. The fact is, when it comes to burning cheap fuels successfully, the OILPULL has no equal.

In addition, however, to cutting your fuel costs of operation in half, the OILPULL possesses all the qualifications you want in the tractor you buy. It is an all-purpose outfit, and will handle all your power jobs, draw bar or belt, and save money at each operation.

In the OILPULL you get unusually strong construction and durability. All parts are well lubricated and protected. Oil cooling means no bother with cooling water and *no danger of freezing.*

The OILPULL is governor controlled, the speed automatically regulated to the load, the power always steady and uniform. As a threshing engine it can't be beat. Recent added advantages are a pre-heater which means quick engine efficiency in the coldest weather—and a self-starter.

You can depend absolutely upon the OILPULL, as you can depend upon all Advance-Rumely machines, among which are the famous Rumely Ideal Separator, Advance-Rumely steamers, engine plows and the new "8-16" and "12-24" small tractors.

The OILPULL is built in two sizes, 15-30 and 30-60 h. p.

Our nearest branch will send you a special catalog of this famous tractor on request.

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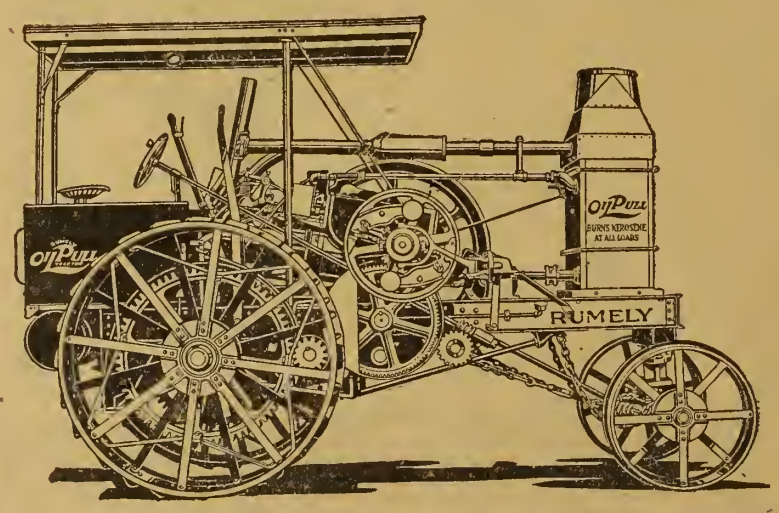

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We guarantee the OilPull tractor to operate successfully *at all loads, under all conditions,* not only on all grades of kerosene permitted by law to be sold in the United States and Canada but on distillate and fuel oils free from earthy matter.

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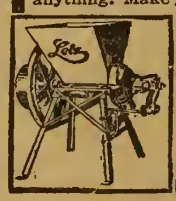

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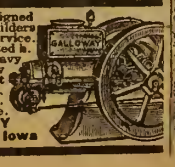
Are powerful, durable, reliable. Designed and constructed by master engine builders for hard, continuous, heavy-duty service. Use any fuel. Develop way above rated h. p. Easy to start—no cranking. Heavy weight, large bore, long stroke, low speed, wide bearings. All sizes at wholesale prices. From 1 3-4 to 16 h. p. portable, stationary, saw rigs, etc. Sold on five selling plans, cash or time.



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Box 1825 Waterloo, Iowa

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Square pulling, easily started, four wheels, 12 full h. p. on draw bar, with surplus of 4 h.p. by actual dynamometer test. 20 horse power on belt. Four cylinder, water cooled, long stroke, modern motor. Transmission a unit with motor. By actual test requires only 13.3 per cent of motor's power to propel itself, delivers at the draw bar 86.7 per cent of the motor's efficiency.

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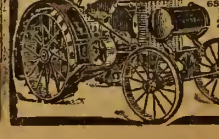

Will do any portable engine job, sawing, silo filling, corn shelling, shredding; easily handle 28-in. grain separator; pulls easily three 14-in. bottoms 8 to 9 in. deep in clover or timothy sod. Unexcelled for road building. My new 1917 catalog is ready. Ask for it today.

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Advertisements will be inserted in this department for 5c per word; four or more insertions, 4c a word each insertion. Remittances can be made by postoffice money order or personal check. Advertisements are set in uniform style, no display type or illustrations admitted under any circumstances. Every figure and initial counts as one word. Guaranteed circulation over 50,000 copies each issue. WESTERN FARM LIFE is issued semi-monthly the first and fifteenth of each month. Advertising copy for this department must reach us ten days before date of issue. It carries the most classified advertising because it gives you best results. Send us in a trial advertisement. Write for proof showing how those columns pay advertisers.

POULTRY

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

PLYMOUTH ROCKS

WHITE PLYMOUTH ROCKS, 15 EGGS, $2.00. Hatch guaranteed. Lone Tree Ranch, Carr, Weld county, Colo.

BARRED PLYMOUTH ROCK COCKERELS FOR sale—From extra good laying strain; $2 to $3 each. Mrs. C. W. Douglass, Wray, Colo.

REMOVAL SALE—BREADWINNER WHITE Rocks. Blood of 200 to 301 egg layers. Particulars. Doble, 2434 So. Race St., Denver.

WINTER LAYERS—BARRED PLYMOUTH Rock eggs $1 for 15; $4 for 100. Mrs. Lon Edwards, 1105 Garfield Ave., Loveland, Colo.

PARTRIDGE ROCKS. LARGE TYPE COCKerels, good color, ready for service. Eggs ready for early hatching. Roy Sutton, Minneapolis, Kansas.

BARRED ROCK COCKERELS AND PULLETS. Also baby chicks, Barred Rock and White Leghorn after March 1st. Green Poultry Co., Haigler, Neb. Estsblished 1910.

BARRED PLYMOUTH ROCK COCKERELS. Heavy egg-lsying strain. Large boned, fine bsrred, yellow-legged. Price $1.50 to $2.00 each and up. Mrs. Raymond Voss, Hubbard, Neb.

PARTRIDGE PLYMOUTH ROCKS — THE beauty and utility breed, stock for sale that are prizewinners. Pullets $2.00, cockerels $3.00 to $5.00 each. Eggs for hatching $1.50 and $3.00 for 15 eggs. Satisfaction guaranteed. A. R. Stover, Manzanola, Colo.

LEGHORNS

S. C. BLACK LEGHORN COCKERELS. WILliam Cross, Utica, Neb.

TIP TOP ROSE COMB BROWN LEGHORN eggs. J. E. Wright, Wilmore, Kans.

SINGLE COMB WHITE LEGHORN BABY chicks, 10 cents each. Anna Hege, Sedgwick, Kans.

SINGLE-COMB WHITE LEGHORN EGGS. English Barron strain. Baby chicks. F. B. Morger, Fowler, Colo.

FINE SINGLE-COMB BROWN, BUFF AND White Leghorn cockerels $1.50 up. L. P. Harris, College View, Neb.

TOM BARRON'S WHITE LEGHORN HATCHing eggs and baby chix, reasonable. Free circular. Andy Mikkelson, Utica, Neb.

HEWITT'S S. C. BUFF LEGHORNS, COCKERels $2.00 each. Eggs $1.00 per 15, 50 for $3.00, 100 for $5.00. Mrs. Philo Hewitt, Lexington, Neb.

SINGLE COMB WHITE, S. C. BROWN LEGhorns, bred-to-lay strains. Eggs $2.00 for 15, $3.00 for 50, $6.00 for 100. Plainview Poultry Farm, Lebo, Kans.

SINGLE-COMB BROWN LEGHORNS, TRIO $10.00, pen $15.00, cockerels $2.50 up, eggs $7.00 hundred. Setting $2.00. Prepaid. Chas. Bowlin, Olivet, Kansas.

EGG-BRED, BARRON STRAIN, SINGLE COMB White Leghorns. Hatching eggs and baby chicks for sale. Write for catalog. The Rowley-Egg-Farms Company, Palisade, Colo.

RIVERSIDE POULTRY FARM S. C. WHITE Leghorns. Heavy winter layers. Range raised. 12 years in the business. Hatching eggs, baby chix for sale. H. D. Walker, La Junta, Colo.

SINGLE COMB WHITE LEGHORN EGGS, trap nested, $1 setting. Eggs from hens that lay 2 eggs in one day, $1.00 each. Baby chicks, 10c each. E. M. Stark, Farmington, N. M.

EXTRA GOOD SINGLE COMB WHITE LEGhorns—Pure white, low-tailed males mated to heavy laying females. Eggs $5.00 per 100; setting $1.50. Order now. E. D. Allen, Inland, Neb.

S. C. W LEGHORNS, HATCHING EGGS FERtility guaranteed; day old chix, born with a "hustle" in them From trap nest recorded and Hoganized parents. Order now for March to July deliveries. Satisfaction guaranteed. Established 1908. Rosawill Poultry Farm, R. No. 4, Box 60, Denver, Colo.

RHODE ISLAND REDS

SINGLE COMB REDS. WHITE LEGHORNS and Orpingtons, free list. Glenn Davison, Grand River, Iowa.

PURE BRED R. C. R. EGGS FOR HATCHING, $1.25 per 15; $5.00 per hundred. Mrs. F. A. McGuire, Paradise, Kan.

EGGS FOR HATCHING, ROSE COMB REDS exclusively; prize-winning, heavy laying strain. Write for mating list. E. A. Miller, Alma, Neb.

SINGLE COMB RHODE ISLAND REDS. EXhibition and heavy laying strain. Good as the best in the U. S. Eggs $1.50 up. W. V. Lewis, 1265 So. Vine St., Denver, Colo.

EXHIBITION AND HEAVY LAYING TYPE Single Comb Reds We are the oldest breeders of reliable Reds in the West. Eggs now ready for hatching, $6.00 per 100. Send for circular. Lower's Poultry Farm, Arvada, Colo.

SIX GRAND PENS ROSE COMB REDS, mated to roosters costing $15.00 to $50.00. 15 eggs $2.50. 30 eggs $4.00. 50 eggs $6.00. Pure bred range flock, $5.00 per 100. Baby chicks. Send for catalog. W. R. Huston, Americus, Kan.

FREE—HOW TO MATE AND BREED RHODE Island Reds. Just what you want to know but could not get correct information. Send stamp. Trapnested stock, both combs, big, dark velvety red strain for sale. Ava Poultry Yards, Ava, Mo.

ORPINGTONS

ORPINGTONS, WHITE OR BUFF. LIST FREE. Frank Lewis, Superior, Neb.

S. C. BUFF ORPINGTON COCKERELS OF correct shape and color, big bone, blue ribbon winners, $3.00 to $5.00. Geo. S. Turner, Canon City, Colo.

TO ADVERTISE MY BUFF ORPINGTON EGGS from prize winners, for hatching, $1.60 for 15. Prepaid Colorado. Stricker, 41st and Charles, Omaha, Neb.

EGGS, EGGS, EGGS—FROM MY S. C. BUFF Orpingtons that are Buff; not the cheapest, but the best. They weigh, win and lay. Eggs $1.50, $3.00 and $5.00 per 15. Utility $7.00 per 100. State Vice-Pres. National S. C. Buff Orpington Club. F. M. Shank, R. No. 2 A, La Junta, Colo.

WYANDOTTES

WHITE WYANDOTTE EGGS FROM TRAPnested stock. Mary M. Wright, Route 2, Boulder, Colo.

ANCONAS

SINGLE COMB COCKERELS, $2.00. Eggs, $1.50 set 15, $5.00 per 100. Quality Ancona Yards, Morganville, Kan.

MATCHLESS MOTTLED ANCONAS, EGGS $1.50, $2.00, $2.50, $3.00. Prize winning stock. Cockerels $5. Mrs. D. S. Davis, 140 Jackson St, Denver, Colo.

BRAHMAS

MY LIGHT BRAHMAS AGAIN WIN SWEEPstakes in the big 1917 Denver Stock Show. I have over 100 beautiful standsrd bred L. Brahmas in my pens. Cockerels and eggs for sale. Prices reasonable. E. Grosser, W. 23rd snd Perry, Denver.

CORNISH

QUALITY DARK CORNISH, THE IDEAL FARM fowl. W. W. Officer, Fowler, Colo.

MINORCAS

BUFF MINORCA EGGS FOR SALE, $1.50, $3.00 and $5.00 per 15. Red River Poultry Farm, Devoe, Okla.

SEVERAL VARIETIES

BABY CHICKS, 11 STANDARD VARIETIES. Kansas Poulry Co., Norton, Kan.

REDS, ROCKS, LEGHORNS, 12½c. REQUEST folder. McCune Hatchery, Ottawa, Kansas.

FOR SALE—Chicks and eggs from S. C. W. Leghorns and Rhode Island Reds. J. O. Bartholomew, Rocky Ford, Colo.

EGGS, $1.50 PER SETTING. LEGHORNS, Reds, Rocks, Wyandottes, Orpingtons. Royal Poultry Yards, Coffeyville, Kans.

FOR SALE—WHITE WYANDOTTE AND LEGhorn cockerels. Prize stock. Reasonable. Setting eggs. Mrs. A. C. Fye, Boulder, Colo.

WANTED TO HEAR FROM PEOPLE HAVing Red Bourbon Turkey hens for sale and the prices. H. B. Metzler, Franktown, Colo.

HALL'S S. C. REDS AND WHITE ROCKS WIN again at the Great Denver Stock Show. Eggs $1.50 per setting up. Mating list free. Stock for sale. Liston L. Hall, Gering, Neb.

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EGGS WANTED FOR HATCHING FROM PUREbred farm-raised stock. Write us what kind you have. Highest prices paid by the case. Denver Incubator Co., 177 S. Broadway, Denver, Colo.

COLUMBIA HATCHERY—ALL LEADING VArieties of baby chicks, cockerels and hatching eggs. Reds, Rocks, Leghorns, Orpingtons, etc. Live delivery of baby chicks guaranteed to your express office. We ship to all parts of Colorado, Wyoming, New Mexico. Write for price list. P. O. Box 1102, Denver.

COCKERELS, $2. PULLETS, $1.50 EACH. Can make up some good pens at very reasonable prices. All the leading breeds. Now is the time to order eggs for early spring delivery, $1.50 per setting; $6.00 hundred. Booking orders now for baby chicks. J. L. Keating, Box 357, Kansas City, Mo.

EGGS, EGGS—FROM THOROBRED TURKEYS, geese, 8 kinds of ducks, Pearl and White Guineas, Barred, White and Buff Rocks, Houdans, Rhode Island Reds, Hamburgs, Games, White and Silver Laced Wyandottes, Leghorns, Langshans, Light Brahmas, Minorcas, Cochins, Buff and White Orpingtons, Bantams, also Hares, Rabbits, Guinea Pigs and Fancy Pigeons. D. L. Bruen, Platte Center, Neb. Write wants.

ONE ADVERTISEMENT SOLD ALL HER COCKERELS

Western Farm Life:
Enclosed please find Money Order to pay for my classified ad. Your paper surely is all right. My cockerels are all sold, so please discontinue my ad. I will send you an egg ad. later. Thanking you very much.
Mrs. Raymond Voss, Hubbard Neb.

S. C. BLACK MINORCAS—PRIZE WINNERS. 14 prizes won out of 16 birds exhibited at Kansas State Fair. Stock, eggs and baby chix for aale. F. Kremer, Manchester, Okla.

BUTTERCUPS

SICILIAN BUTTERCUPS, THE FOWL FOR farmer, fancier and family. Circular and mating list free. W. Bachmann, 1039 Fillmore st., Denver, Colo.

LANGSHANS

FARM RAISED, PURE BRED WHITE LANGshans; hens, pullets, cockerels, eggs. Mrs. Geo. McLain, Lane, Kan.

BLACK SPANISH

WHITE-FACED BLACK SPANISH, FROM THE best stock to be obtained in this country. Have sold out on stock, but can furnish eggs $2.00 per setting, $10.00 per 100. W. W. Yale, Chickasha, Okla.

GUINEAS

GUINEAS PROFITABLE—EASY TO RAISE AS quail, $5.00 trio. "The Copes," Topeka, Kan.

DUCKS

ROYAL BLUE STRAIN RAUEN DUCKS, $1.75 each. Eggs in season. Jas. Cassell, Fremont, Neb.

WHITE PEKIN DUCK EGGS, $1.25 PER SETting. Ducklings 22c each. A large, fast-growing strain. Wm. M. Jones, Arvada, Colo.

BABY CHIX

RESERVE BABY CHICKS NOW; FROM sturdy, farm-reared Rocks, Reds, Orpingtons, Wyandottes, Leghorns; safe delivery by hundreds or thousands, guaranteed. Red Hen Poultry Farm, Hastings, Neb.

SPRINGVALE POULTRY FARM—DAY OLD Chix delivered to your express office, all charges paid, guaranteed alive. Large strain S. C. White and Brown Leghorns, $15.00 per 100; Barred Rocks, R. C. Reds, Buff Orpingtons and Black Langshans, $17.00 per 100. Leftovers above breeds, $13.00 per 100. Hatched in the right climate and in the right way to live when you get them. Edwards Steinhoff, Leon, Kan.

INCUBATORS

IT'S GOOD BIG HATCHES YOU WANT THIS year. Denver Incubators are built and tested for this dry climate and positively do the work. Get our free catalog. Low prices, with freight prepaid. Coal heated colony brooders. Baby chicks and eggs for hatching from purebreds. Denver Incubator Co., 177 S. Broadway, Denver, Colo.

EGGS FOR HATCHING. TURKEYS 20C apiece. Toulouse geese 25c apiece. Pekin ducks 15c apiece. Plymouth Rock eggs, $1.50 setting of 15. Mrs. C. J. Davidson, Ft. Lupton, Colo.

PET STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

YOU CAN MAKE A GOOD LIVING IN YOUR back yard raising Belgian hares. Particulars and price list of all breeds, 10 cents. Thorson's

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LIVE STOCK

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CATTLE

ONE REGISTERED HEREFORD BULL, ELEVen months old for sale. Mrs. Alice Wolfe, Flagler, Colo.

CHELMSFORD JERSEY FARM CAN SEND YOU a bull ready for service, registered. R. F. D. 58, Littleton, Colo.

IF YOU DON'T FIND ADVERTISED HERE what you want, write our classified advertising department and they will be glad to place you in correspondence with the right parties.

REGISTERED HOLSTEINS AT BARGAIN. Three cows, three heifers, one bull. All A. R. O. ancestry. David Hamm, Rocky Ford, Colo.

WE CAN SELL 15 YEARLING BULLS AND about 30 bull calves, all registered, and of the best breeding and individuality. Among the yearlings are three herd headers, also one 4-year-old bull by Simoon. All at popular prices in order to sell. J. O. D. Ranch, Aroya, Colo.

REGISTERED JERSEYS AND MILKING Shorthorns. Jersey herd headed by Maggie's Shy Duke 140084, Grand Champion Denver Stock Show. Two nearest dams average 54 lbs. milk per day. Shorthorns headed by Independence Lee 427351. Two grandams average 9023 lbs. milk in one year. The Hinman Silo Co., 1650 Champa st., Denver.

HIGH CLASS JERSEYS—COUNT MAJESTY AT head of herd. His dam, Mandana's Lady Imp., last year gave 14,014 lbs. milk, 784 lbs. 1 oz. butter. His calves are showing up fine. Have one December bull calf by him for sale. He is good. Could spare one or two cows. Also Duroc hogs of best breeding. A. M. McClenahan, Greeley, Colo.

HOGS

REGISTERED BIG TYPE DUROC JERSEY hogs for sale. Edgemoor Farm, Littleton, Colo. Caldwell Martin, Owner.

REGISTERED DUROC JERSEY BOARS AND gilts. Sell at $15 up, according to age and quality. Registered gilts bred to our boars at $30 up. Our hogs top the market every time in Denver, and we hold the record on that market at $11.10 for 6-months-old barrows averaging 206½ lbs. J. O. D. Ranch, Aroya, Colo.

HORSES

REGISTERED PERCHERON AND STANDARD bred mares for sale. E. C. Mason, Boulder, Colo.

REGISTERED PERCHERON STALLIONS FOR sale or trade. One black, 9 years old, weight 2,100. One black, 2 years old. Two black yearlings. E. E. Watters, Rocky Ford, Colo.

NOBLE REX, REGISTERED SADDLE BRED stallion by son of Rex Donald, black, 16 hands, 1,200 lbs. Winner of the stallion class at Western Stock Show, Denver, 5 years old and the stallion to cross on our mares, on account of breeding bone, and individuality. Price $750.00. Will stand up to April 1st at the Denver Omnibus Co. Stables, Denver, in charge of Mr. Nate Fitzell. J. O. D. Ranch, Aroya, Colo.

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FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WANTED—TO HEAR FROM OWNER OF FARM or unimproved land for sale. O. K. Hawley, Baldwin, Wis.

WANTED—TO HEAR FROM OWNER OF good farm for sale. Northwestern Business Agency, Minneapolis, Minn.

HOMESTEADS LOCATED, UTAH—LOW PRICE dry and irrigated farms. Free circular. Box 607, Salt Lake, City, Utah.

WANTED—TO HEAR FROM OWNER OF GOOD ranch for sale. State cash price and description. D. F. Bush, Minneapolis, Minn.

FARM WANTED—Wanted, TO HEAR FROM owner of farm or fruit ranch for sale. O. O. Mattson, 2949 Cedar Ave., Minneapolis, Minn.

JAHNKE & KONKEL WILL GIVE YOU A square deal. If you want to buy, sell or trade property, be sure and see them. 1410 Stout st., Denver.

FOR SALE—$2,000 BUYS A SMALL, OLD established, well paying dairy in coal mining town; will bear investigation. Address C. I., care of Western Farm Life.

FOR SALE OR FOR RENT—15 ACRES AT Lazear, 5 miles from Delta, irrigated, 7½ acres alfalfa. All fenced; 4-room house, barns, chicken houses, etc. Terms to suit. S. Kranz, Colorado City, Colo.

FOR SALE OR RENT—480 ACRES, 18 MILES southeast of Colorado Springs, about 5 miles south of Franceville coal mine. About 80 acres plowed, all fenced, 3-room house, 2 wells. Terms to suit buyer. S. Kranz, Colorado City, Colo.

WANTED—TO HEAR FROM PARTIES WHO have real estate to sell or exchange, as we have hundreds of customers that are in the market. Our plan is absolutely certain, as we positively guarantee you a customer or we make no charge or have no fee. Address Real Estate Dept., Weldon Valley Adv. Co., Weldona, Colo.

LAND—I HAVE PLACED OVER 400 FAMILIES in Weld County, mostly on homesteads and relinquishments. I know nothing desirable left open to entry, but can still furnish partly improved relinquishments or deeded lands at very low price. Call for list. Every statement guaranteed. Land shown by auto from Denver. Mackley, 1643 Champa, Denver, Colo.

OREGON AND CALIFORNIA RAILROAD CO. Grant Lands. Title to same revested in United States by Act of Congress dated June 9, 1916. Two million three hundred thousand acres to be opened for settlement and sale. Power site, timber and agricultural lands. Containing some of the best land left in United States. Now is the opportune time. Large sectional map showing lands and description of soil, climate, rainfall, elevations, etc. Postpaid for one dollar. Grant Lands Locating Co., Box 610, Portland, Ore.

I HAVE 160 ACRES OF AS GOOD LAND AND as good a water right as there is in the West. Sixty acres under ditch and in cultivation. Good house, well and other improvements. The entire 160 acres is all good level land. It is located adjacent to forest reserve and is an ideal place to farm and run a nice bunch of cattle. I am so situated that it is necessary for me to make a quick sale. I will sell for $6.00 an acre payment down; 10 years' time on the balance, or will consider part payment in trade with no money down. I want to turn this land and all you need to do is to show me you mean business. Write me if interested for further details and how you would prefer to make payments. Sidney E. Bartlett, 1402 Arapahoe St., Denver, Colo.

HELP WANTED

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

MAN TO WEAR FINE SUIT, ACT AS AGENT. Big pay, easy work. Banner Tailoring Co., Dept. 502, Chicago.

WE WANT A RELIABLE MAN OR WOMAN TO handle subscriptions in each community. Liberal terms. Write us today. Western Farm Life, Denver, Colo.

MEN—BECOME GOVERNMENT RAILWAY mail clerks, $75 to $150 month. Every second week off with pay. Education unnecessary. Sample examination questions free. Write immediately. Franklin Institute, Dept. A 177, Rochester, N. Y.

WANTED—IMMEDIATELY, 500 MEN, 20-40, for railway motormen and conductors; all

Continued on Page 23

Live Items About Live Stock

Trade conditions in livestock have been abnormal during the past few weeks. On the Denver market, fat steers sold at $10.65, hogs at $12.25 and lambs at $14.15. When a steer weighing 1,350 pounds sells for $143.78 —a 200-lb. hog for $24.50 and a 90-lb. lamb for $12.74, there is surely money in raising livestock for the Western farmer, especially when it is considered that a good grade hog can be made to weigh 200 lbs. at seven months of age. However, this is not all profit; at corn worth a dollar per bushel and other feed in proportion, the cost of production is no small item.

With our export trade cut off, it is hardly probable that these abnormal prices will hold up very long. However, there is a scarcity in beef and pork animals and no heavy drop is anticipated soon.

Good Blood Profitable

The animals that top the market are invariably high grade stuff. That which is bred for meat, will take on flesh uniformly and will cut out profitably. One hundred dollars or even $500 saved on a sire because he is not up to the standard in breeding or conformation, will often be lost many times over in the sale of his offspring. An inferior sire is dear at any price. He is more than half the herd and his poor qualities will predominate in his get and will show at a marked disadvantage on the market.

There has never been such a demand for pure bred stock in the history of the country. One hundred dollars paid for a young boar was not more unusual at the recent stock show than was $50 a few years ago. Buyers will always pay a premium for a smooth well bred bunch of hogs and the same applies to cattle and sheep.

The state of Utah has a new law in regard to range bulls that is going to prove very efficient. This law, which went into effect January 1, 1917, compels all who would use the public domain for pasture, to provide one pure-bred bull of recognized breed type for each forty breeding cows or fraction thereof. Western states have experienced considerable annoyance from unscrupulous dealers who pick up inferior stock in the east at a very small cost and sell them to farmers at comparatively low prices, but far more than their actual worth. Farmers should realize that a certificate of registration is not a guarantee of the individual excellence of a bull and it is far better to buy a sire from a breeder of well known reputation for square dealing, even tho the cost is greater. As a general rule, it is better to buy from a breeder in your own state, a man who has a good reputation to maintain and who prefers to castrate an inferior animal rather than sell him for a breeder. It is well to beware of the unknown horse and bull peddlers; in the event the animal proves unsatisfactory, you have no recourse and the small gain in the original cost will be heavily discounted in the end.

$5,000 for Colorado Calf

Again has the West demonstrated its ability to compete with the big breeders of the East in producing record priced individuals.

At the big annual Polled Hereford sale at Des Moines, Ia., Jan. 30 to Feb. 3, a Colorado yearling, Echo Mischief, brot the record price in the world for Polled Herefords, when it was sold to John Kelleher, Patterson, Ia., for the munificent sum of $5,000. This calf was bred and raised by J. D. Brunton, proprietor of the Glendale ranch, Aspen, Colo., under range conditions, was run with his other registered cattle, which were kept in a thrifty condition, but not given special attention; neither was it "hand picked" as was the Eastern sale stuff, by representatives of the association, but its selection was left to Mr. Brunton. This calf topped the big sale by more than $1,000 and places Colorado clearly in the lead as a locality where the best in cattle can be produced.

Some of the Wyoming flockmasters have contracted their spring wool clip at forty-one cents per pound, which is a record price.

National Forest Grazing Fees Increased

An increase of 25 per cent in the grazing fees on all national forests, instead of 33 1-3 per cent as originally contemplated, will be made for the season of 1917, according to the plan announced by the Secretary of Agriculture. Subsequent increases will be on a study of the local conditions. Based on the facts thus obtained additional increases will be made when the real value of the forage upon any forest is found to be more than the amount charged. No additional increase will be made before March 1, 1918.

Locoed Mare

I have a 5-year-old mare with foal, which is pretty badly locoed. She is awful slow and drowsy. Is there any drug I can give her to help her? If so, what is it, and how much at a dose? —C. B., El Paso, Colo.

There is no medicinal treatment that I can recommend for loco. Feed hay or grain and keep the animal away from any possible manner of obtaining loco.

Cornstalk Disease

I have recently lost two cows and my neighbors many more from cornstalk disease. It seems that when the cornstalks are fully matured before being frosted, we suffer no loss, but when not mature, we lose cattle. Do you think the frost develops in poisonous acid in the immature stalks that kills the animals, or is it caused by impaction? I feed my cattle well before turning in the stalk field, and they have access to salt and pure water all the time.

What will counteract this poison, and what treatment should be given to affected animals? We sometimes find the animals before they get down.—C. E. D., Yuma Co., Colo.

We are still in the dark as to the cause of the so-called 'cornstalk disease. Cattle are sometimes poisoned from eating green kafir corn, cane, Johnson grass, and possibly maize, late in the summer, when it has made a stunted growth, from lack of moisture.

The cornstalk disease occurs in the winter time when cattle are turned into the stalk fields. It seems to be rather more common in years when there is a heavy growth of cornstalks and during cold, wet storms. The first symptom noticed is the animal standing apart from the others with back arched, kicking toward the belly and indications of delirium. The symptoms become more marked and characteristic of "blind staggers." Death usually follows within 24 hours. These cases can easily be attributed to acute indigestion and in most cases to impaction. It is quite definitely established that it is not caused from corn-smut or from nitre that has been deposited in the joints of the cornstalks in large quantities. It is probable that several diseases are confused under the name of "cornstalk disease." No doubt many of these cases are hemorrhagic septicaemia. Since most of these cases are probably caused by too exclusive a ration of non-succulent, indigestible

We are the largest producers of pure bred Hereford bulls in the United States. Our bulls are as well bred as the average that are registered and the prices are much lower.

The Tompkins Cattle Company
(Incorporated)
Breeders of Pure Bred Herefords
General Offices 418 McPhee Building
DENVER, COLORADO

BLUE RIBBON HERD
DUROC JERSEY HOGS
Everything Registered
Stock for Sale
C. F. BURKE, Rocky Ford, Colo.

BARGAINS Percherons, Belgians, Shire, Clyde, Suffolk, Hackney. Great Coach Stallions. Good Jacks. Time given purchasers.
R. I. LITTLE
Good Block Des Moines, Iowa

Stallions and Jacks
One 2-year-old registered Jack and two yearling Jacks; all big, heavy-boned. One 2-year-old registered Percheron stallion. One Belgian stallion, grade. One standard-bred stallion. Colorado raised and acclimated.
JOHN E. BURNS, Louisville, Colo.

Shorthorn and Polled Durham Cattle
Valentine's Last, X12316; 452005 at head of beef herd. Claywood White, 427350 at head of milk type.
STATE INDUSTRIAL SCHOOL
Golden, Colorado

"MURRAY'S Chester White Bred Sows and Gilts." 50 head bred and ready to ship. Write for prices. Everything cholera immune.
CHAS. H. MURRAY, Friend, Neb.

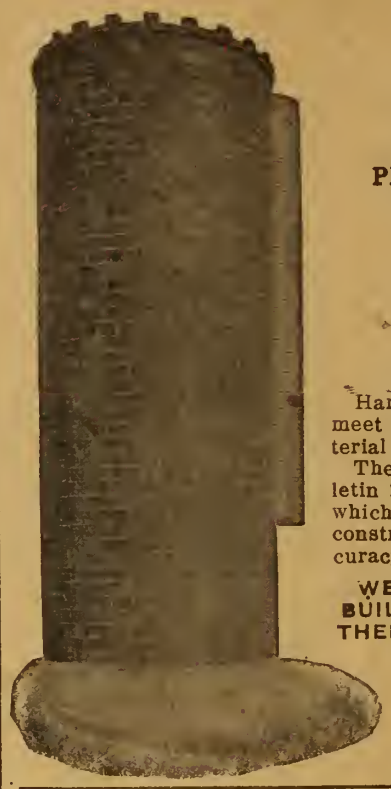
JACK MEN, LISTEN
I have the largest 6-year-old jack west of the Missouri River for sale. Other bargains in Mammoth jacks and jennets.
Inspection Invited Satisfaction Guaranteed
W. H. WHEELER, Garden City, Kan.

Home of the Giants

100 Jacks and Jennets. We handle the big kind. Special attention to bone, foot and weight. All ages. Prices from $300 up. All registered, all guaranteed, as represented.
BRADLEY BROS., Warrensburg, Mo.
65 Miles East of Kansas City. Main line Missouri Pacific.

Home-Bred Draft Stallions
Your choice $500, with the exception of two. Also mares for sale.
A. LATIMER WILSON, Creston, Ia.

THE PERFECT SILO



Vitrified Hollow Tile
Salt Glazed Hollow Tile

THE PERFECT SILO MUST BE
airtight,
Impervious to water,
Strong,
Durable,
Convenient,
Acid-proof,
Alkali-proof,
Fire-proof,
Frost-proof,
Wind and weather proof.
Good-looking,
Simple,
Permanent,
Free of Upkeep Cost,
Not too Expensive.

Hard burned vitrified hollow clay tile silos meet every requirement, and no other material does.

The Colorado Experiment Station says, Bulletin 200, page 18: "It embodies every factor which goes to make a perfect silo." 224 silos constructed by us in two years prove the accuracy of this statement.

WE BUILD THEM
Under positive written guarantee.
At a cost no higher than wood or concrete.
On terms that you can meet.

We make a special discount for March contracts.

THE HINMAN SILO CO.
1650 CHAMPA ST., DENVER, COLO.

HINMAN SILO CO.,
1650 Champa St., Denver, Colo.
Please send me, free of cost, your booklet describing the PERFECT SILO.
Name.....
Town..... State.....
How large a silo do you expect to build?.....
When do you expect to build?.....

The Farmers Life Insurance Company
Home Office, 340 Gas & Electric Building,
DENVER, COLORADO

Admitted assets .....$ 2,288,644.00
Insurance in force..... 16,689,093.00
Capital stock and surplus..... 381,041.00

DO BUSINESS WITH A HOME CONCERN AND KEEP YOUR MONEY IN THE WEST

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Kiowa Valley
35 MILES EAST OF DENVER
Where the good renter with equipment and some cash can buy proven farm land from $20 to $40 per acre and own his own farm in two years.
Reynolds, Covey & Reynolds
272 McPhee Bldg. DENVER, COLO.

APOLLO ROOFING

Fireproof, weatherproof, strong, rigid, durable—specially adapted to the construction of farm buildings. Formed from APOLLO-KEYSTONE Copper Steel Galvanized Sheets.
APOLLO-KEYSTONE Sheets are the most satisfactory, rust-resistant sheets obtainable for Roofing, Siding, Culverts, Tanks, Silos, Cisterns and all exposed sheet metal work. Look for the Keystone added below regular Apollo brand—it indicates that Keystone Copper Steel is used. Demand the genuine—accept no substitute. Sold by weight by leading dealers. Our free booklet "Better Buildings" contains building plans and valuable information. Send for copy today.
AMERICAN SHEET AND TIN PLATE COMPANY, Frick Building, Pittsburgh, Pa.

Help Wanted

Continued from Page 21

parts United States; $60-$100 monthly. Experience unnecessary. Send stamp for application blank. National Railway, Dept. 188, Kansas City, Mo.

SALESMEN WANTED TO CANVASS THE farming and threshing trade, soliciting orders for lubricating oils, greases and paints. Excellent opportunity for right party. Previous experience unnecessary. Address at once, The Victor Oil Company, Cleveland, Ohio.

LUMBER

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

LUMBER POSTS AT LOWEST PRICES. GET our delivered prices. Send lumber list for estimate. Pay after unloading. Kirk Company, Tacoma, Wash.

IF YOU DON'T FIND ADVERTISED HERE what you want, write our classified advertising department and they will be glad to place you in correspondence with the right parties.

SEEDS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

BLACK HULLED WHITE KAFIR SEED, Recleaned, tested and sacked, $2 per bu. Grover Lee, Pratt, Kan.

BLACK HULLED WHITE KAFFIR SEED—Recleaned, $2.25 per bu. 1916 crop. Well matured. H. W. Chestnut, Kincaid, Kan.

DAHLIAS, 185 NAMED KINDS; CANNAS, HARDY flowers, shrubs and fruit. Write for prices. James McMullen, Franklin Ave., Council Bluffs, Iowa.

CHOICE SEEDS, DWARF AND STANDARD Kafircorn, Dwarf White and Yellow Milo Maize, White, Red and Black Cane Seed, Broomcorn seed, Sudan, Sweet Clover and other seeds. I. T. Reid, Goodwell, Okla.

FREE 1917 PLANTING GUIDE AND PURE Seed Book; 96 pages. Handsomely illustrated in many colors. Describes latest, best varieties vegetables, flowers, field crops, fruits, shrubbery, etc. A dictionary on gardening. Flower lover's delight. Field crop guide. An orchardist's manual. Berry-grower's book. A postal gets it. Don't buy seeds until you read it. Galloway Bros. & Co., Pure Seed Specialists, Waterloo, Iowa.

NURSERY STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

TREES, KANSAS-GROWN TREES—20 PEACH one dollar. Five dollars sets an acre. Get our prices before you buy. Sunflower Nurseries, Lawrence, Kansas.

IF YOU DON'T FIND ADVERTISED HERE what you want, write our classified advertising department and they will be glad to place you in correspondence with the right parties.

MISCELLANEOUS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WANTED—ALFALFA SEED, SAMPLES AND prices. Box 37, Silver Cliff, Colo.

PLENTY OF MONEY TO LOAN ON CHOICE farms at 6 per cent. Paul B. Walker, Fort Morgan, Colo.

WANTED—TO BUY POLAND CHINA SOWS or gilts bred for March farrowing. A. C. Bann, 1531 East 7th, Pueblo, Colo.

BOY OF 18 WANTS POSITION ON SMALL ranch. Will take any job if suitable. Address E. B., care Western Farm Life.

DELICIOUS ALFALFA HONEY FROM PRO-ducer. Two 60-lb. cans, $12.75. Satisfaction guaranteed. Wesley Foster, Boulder, Colo.

FOR SALE OR TRADE FOR LIVE STOCK—Twin City 15 H. P. gas tractor with moldboard and disk plow. First-class condition. A. W. Woolley, Erie, Colo.

FARMERS AND STOCKMEN, IF TROUBLED with Loco Weed, you can kill it with our Loco Killer without chopping or digging. Also want men to handle territory. If interested, write Western Mfg. & Trading Co., Box 673, Denver, Colo., Successors to Weisenborn & Huck.

KODAKS, CAMERAS, PHOTO SUPPLIES—Ford's, the best kodak store, 1029 16th St., Opp. Old P. O., Denver, Colo., for Eastman Kodaks, all makes cameras, films, photo supplies, develop any size roll films, 10c; print pictures, 3c each and up; mail orders solicited; kodak and camera catalogs mailed free upon request. Mention this paper.

FREE FOR SIX MONTHS—MY SPECIAL OFfer to introduce my magazine, "Investing for Profit." It is worth $10 a copy to anyone who has not acquired sufficient money to provide necessities and comforts for self and loved ones. It shows how to become richer quickly and honestly. Investing for Profit is the only progressive financial journal and has the largest circulation in America. It shows how $100 grows to $2,200; write now and I'll send it six months free. H. L. Barber, 449-20 Jackson Blvd., Chicago.

PATENT ATTORNEYS

IDEAS WANTED — MANUFACTURERS ARE writing for patents procured through me. Four books with list hundreds of inventions wanted sent free. I help you market your invention. Advice Free. R. B. Owen, 162 Owen Bldg., Washington, D. C.

BEE SUPPLIES AND HONEY

BEE SUPPLIES OF BEST QUALITY. SEND for 68-page illustrated catalog. We also sell comb and extracted honey. The Colorado Honey Producers' Association, Denver, Colo.

Oil of the soy bean is a palatable food widely eaten by the Chinese. This vegetable oil also is used in making paints, varnishes, soaps, rubber substitutes, linoleum, waterproof goods, lubricants and printing ink.

cornstalks, the treatment must be largely preventive. Medicinal treatment is not very successful. Prevention would consist in limiting the ration of dry cornstalks and balancing it with a more succulent food. Cattle should be well fed on alfalfa hay, or roots of some kind, and given plenty of water, before turning them into the fields. They should be turned on the stalks gradually the same as you would turn them on a wheat stubble after the field has been cleared. A half hour the first day and gradually increasing the time as the animals become accustomed to the change of feed. "Feeds and feeding" is a subject that farmers can study with profit.—Geo. H. Glover.

Grange Notes

Continued from Page 20

braska line in Logan county, will soon complete a Grange hall, built out of sod, which will amply serve the needs of the community for a civic center.

The Grange now has ten thousand members in Colorado, making the organization quite a formidable group of farmers, who should be able to voice their demands with some authority. The value of the order lies in its conservatism; in the fact that its policies have been formed only after due deliberation, and that it has never advocated measures until certain that they are the right measures to promote.

Two prominent members of the Grange in Adams county, H. G. Tiffany and Harry C. Flanders, are also members of the board of county commissioners of that county. They are both enthusiasts over the system of employing a county agriculturist, which has worked great benefit to the farmers of Adams county. The State Grange at the recent session endorsed the plan of having county agricultural experts, and the Granges in the state are all leaders in advancing the work of such men.

Grange Demands Seed Law

The impression is going over the state that only the farmers of Boulder county are wanting a pure seed law, which is now before the Colorado legislature for consideration. This is the charge of the opponents of the bill, mostly seedsmen, who claim that the farmers are not in earnest over the proposition. In view of the fact that the Colorado State Grange in the recent session adopted a resolution endorsing House Bill No. 50, the pure seed bill, and demanding its passage and enactment into law, the charge that the farmers do not want such a law is not true. The State Grange session was attended by over 200 delegates from all over the state. The members of the Grange should get active, and write to their senators and representatives and ask them to work for the bill, and the Granges should pass resolutions and send to their law makers at the state house.—Rudolph Johnson, State Secretary.

First Prize Winners in Colorado Club Contests

Continued from Page 5

picture, the full list being as follows:

Cow testing champions, each being awarded a $25 prize by the De Laval Separator Company: Floyd Sammon, Boulder; Roy Hockeday, Boulder; Edward Drew, Fort Morgan; Warren Leonard, Fort Morgan.

El Paso county winners: Edward Mangas, potato champion, Monument; Leland Barnes, potato champion, Monument; James Atkinson, corn champion, Calhan; Opal Jessup, sewing champion, Eastonville; Constance Grant, poultry champion, Colorado Springs; Jessie Morrow garden-canning champion, Colorado Springs.

William Fisher, poultry champion, Trinidad; James Brennan, pig club champion, Grand Valley.

Growers Must Improve Methods

Continued from Page 6

Rural on different kinds of soil, to see how they act on the different soils and so we can have in all quite an extensive experiment with them. The Rural New Yorker seems to be holding its own better than any other variety and there is no variety that so universally grows good shape and such quality as it. All the experts say that. The Pearl or Peerless is losing ground in the East. The Green Mountain is a big yielder and in most cases good quality, but it often grows rough and out of shape under some conditions and cannot be depended on always. There is no potato as far as I could learn, that takes in all the markets like the Rural and with certified or pure seed growers to keep up high producing strains. I prefer to stake my luck upon them, and I will also try a certain percentage of Pearl.

We need in Northern Colorado some kind of an early potato to lengthen our harvest. I have selected the Bliss to try some experiments with as the hardiest. It never scabs, is not easily blighted and I believe if they are planted on ground irrigated before plowing, irrigated before they come up or right after planting and then early in July, they will set more to the hill and produce a paying crop. I will try 5 acres along that line. The trouble is with our Early potatoes, they set only 3 or 4 to the hill, grow rather small and 25 to 40 sacks is a good crop. I have always thot our trouble was that they set on in the first part of July when it is very hot and ripen up very soon and my idea is to put some moisture in the ground to carry them thru this time and also give them a vigorous start so they can be irrigated about July 5th. Ordinarily they are too small to water them. Can tell better after a trial or two. I took this point up with Dean, Cleveland and others and they all believe it will work out satisfactorily.

The 50 acres devoted to seed this year is 18 acres of 3 years past in alfalfa, 25 acres broke up alfalfa 4 or 5 years ago, 15 acres sod 5 years ago and been farmed rather poorly since. This 40 acres was in beans last year and ry poorly tended, but fairly clean. All this land is under my own private reservoir with water any time I wish. Will have manure to cover over half this last 40 acres lightly. Will use no manure on the alfalfa broke this year and a light amount on the other. In the East the growers of certified seed cannot supply the demand. The report of the colleges shows that but few men can come up to their standards. New York had only 35 growers who got certificates. It requires a lot of time and study. The experts believe we will come to the point where most of our farmers will buy at least a part of their seed each year from expert growers the same as is d ne in Europe.

Weather news is now received regularly by wireless at 270 amateur radio stations located in 9 of the northern and western states. In this way the wireless operator is enabled to give his neighborhood the weather forecast as soon as it is issued.

This Guernsey Grade Cow
produced yearly for five consecutive years an average of 11490 lbs. of milk and 604 lbs. of butter fat, equivalent to 705 lbs. of butter.

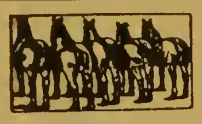
Buy a GUERNSEY BULL for Your Grade Herd

Write for our free booklets about GUERNSEYS

The American Guernsey Cattle Club
Box PX Peterboro, N. H.

REGISTERED DAIRY BULLS
Holstein, Jersey and Guernsey
Bred by the Agricultural College. Most of the dams in the advanced registry
Animal Husbandry Dept., COLORADO AGRICULTURAL COLLEGE, Ft. Collins, Colo.

Iowa State Live Stock Insurance Company
Home Office, Des Moines, Iowa
Colorado Office, No. 314 Tabor Opera House Building, Denver.
We write a blanket policy and also a special policy on registered stock.
AGENTS WANTED IN COLORADO



PERCHERONS—BELGIANS—SHIRES
Imported and home-grown 4 and 5 yr. old stallions, ton and heavier; 3 yr. olds, 2 yr. olds, yearlings. Produce of 62 Imported mares and noted prize-winning Imported sires weighing 2235 lbs. and 2430 lbs. each. Ton stallions at farmers' prices. Fred Chandler, R. 7, Chariton, Ia. Direct from Denver.

El Paso Herd Duroc Jerseys
Took more first premiums at Denver Stock Show with four under 6 mos. pigs than any competitor, on full herds. The reason is plain. Fall pigs sired by Illustrators Chief, the sire of champions in first litter.
J. W. BRAUER
22 Maple St. Colorado Springs, Colo.

DR. A. A. HERMANN
Veterinarian,
Littleton, Colo., Phone 52W
Specialty, Diseases of Cattle.
New Blackleg Serum. Immunizes perfectly calves of any age by only one injection. Descriptive literature furnished.

Purebred Registered
Holstein Cattle
One of the greatest investigations among dairy breeds was made by experts of the Wisconsin Experiment Station. Prof. F. W. Woll states that the "Holstein cows produced considerably more milk solids and fat than the cows of other breeds (19.5 per cent more butterfat than the Guernseys and 38 per cent more than the Jerseys), and they also give larger net returns for feed consumed." In all dairy breed competitions where Holsteins entered have been representative, they have produced a greater net profit for butter than any other breed entered. There's big money in the big "Black and White" Holsteins.
Send for FREE Illustrated Descriptive Booklets The Holstein-Friesian Association of America. F. L. Houghton, Sec'y,
Box 186 Brattleboro, Vt.

BLACK LEG LOSSES SURELY PREVENTED by CUTTER'S BLACKLEG PILLS
Low-priced, fresh, reliable; preferred by western stockmen, because they protect where other vaccines fail.

Write for booklet and testimonials.
10-dose pkg. Blackleg Pills, $1.00
50-dose pkg. Blackleg Pills, $4.00
Use any injector, but Cutter's simplest and strongest. The superiority of Cutter products is due to over 15 years of specializing in VACCINES AND SERUMS ONLY. INSIST ON CUTTER'S. If unobtainable, order direct.
The Cutter Laboratory, Berkeley, California

Indoor Closet
More Comfortable, Healthful, Convenient
Eliminates the out-door privy, open vault and cesspool, which are breeding places for germs. Have a warm, sanitary, odorless toilet right in your house. No going out in cold weather. A boon to invalids. Endorsed by State Boards of Health.
ABSOLUTELY ODORLESS
Put It Anywhere In The House
The germs are killed by a chemical process in water in the container, which you empty once a month. Absolutely no odor. No more trouble to empty than ashes. Closet absolutely guaranteed. Write for full description and price.
ROWE SANITARY MFG CO. 327C ROWE BLDG., DETROIT, MICH.
Ask about the Ro-San Washstand—Hot and Cold Running Water Without Plumbing

Bush Car Delivered Free
Ride in a Bush Car. Pay for it out of your commissions on sales, my agents are making money. Shipments are prompt. Bush Cars guaranteed or money back.

Write at once for my 48-page catalog and all particulars. Address J. H. Bush, Pres. Dept. 318
BUSH MOTOR COMPANY, Bush Temple, Chicago, Illinois

Just Back from Town with his New FISK NON SKIDS

And a wise buyer is he who makes his tire equipment Fisk throughout. Thousands of today's users of complete Fisk equipment began years ago with a purchase of a single tire.

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WESTERN Farm Life

DENVER, COLO.

March 15, 1917.

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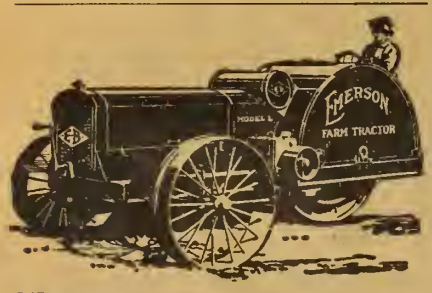

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Deep Plowing Question

Would like to ask Mr. Parsons if he can agree with some authorities that in soils like ours, lava ash, and with little humus, the deep plowing should be pursued only so fast as the soil can be supplied with humus?—F. E. W., Boise, Ida.

The philosophy of deep plowing is best explained by the fact that 10 inches of soil will naturally raise twice as much as 5. In dry farming, after plowing and planting, we cultivate the top three inches continually to hold the moisture underneath it. Whatever humus there is in a soil is found principally at or near the surface and diminishes as we go down. Therefore, if we allow the humus to remain on the surface without plowing it under, the cultivator turns it over and over to atmospheric action, it is soon burned out by slow combustion, and the roots never get the benefit of it.

On the other hand by deep plowing, the surface humus soil is placed down in the root bed where the plants can best use it and where the soil on top of it conserves it from atmospheric action.

Lava soil which has been in grass is usually well supplied with humus, but when the original covering has been sagebrush it is often very patchy, and plowing under green crops may be necessary. Some years ago I passed through the Snake river country and kept tab of all the crops on the lava soils that I encountered. The deep plowers, as usual, had all the best crops and since that time many have plowed deeper with better results.

Failures in deep plowing often result from planting immediately after plowing. Plow in the fall for spring crops and in the spring for fall crops is the only safe rule to go by; but for such crops as corn, sorghum, Sudan grass, early deep plowing with plenty of disking and harrowing will raise good crops.

Land which is too poor for agriculture is not improved to any extent by deep plowing, but may in time be made efficient by turning under green crops or other organic matter.

It used to be argued that considerable humus was necessary to germinate seed. Experiment proved otherwise and that seed will germinate perfectly without humus even in pure sand which is much used by gardeners. Therefore, if there is any humus at all on the surface it is best to turn it under where the roots can get it.—E. R. Parsons.

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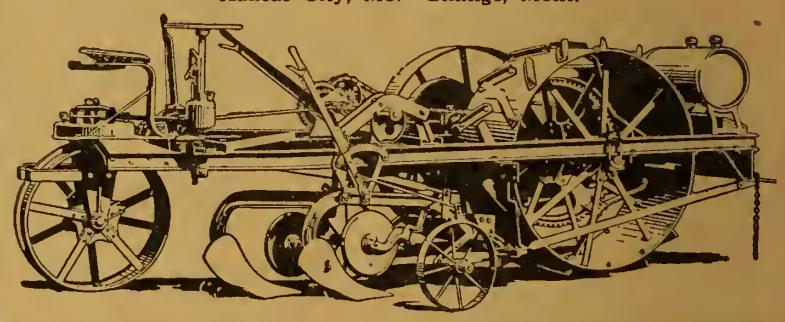

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Largest Circulation of Any Farm Magazine in the West

Volume XIX | DENVER, COLORADO, MARCH 15, 1917 | Number 6

An Education in Beans, Potatoes and Corn

AT EL PASO COUNTY'S ANNUAL AGRICULTURAL EXHIBITION

Ideal Early Ohio Potato for El Paso County.

CORN, potatoes, pinto beans, Sudan grass, oat and barley hay and small grains, practically all from non-irrigated farms, furnished the principal exhibits at the El Paso County Corn Show February 20th to 23rd, at Colorado Springs. This was strictly an educational show, every exhibit telling a story or carrying a lesson in better farming. Standards have been fixed by County Agriculturist W. H. Lauck, and the farmers aim to meet those standards in the produce they grow for market, or such as they may select for exhibition purposes. There was but one criticism offered by those who viewed the exhibits with practiced eye and that related to potatoes; many of the spuds exhibited were too large to meet the ideal market type. That fault is being corrected by the growers as rapidly as possible.

From the standpoint of the spectator the big potatoes proved a source of comment and wonder. Six big Burbanks laid end to end against a yardstick, measured the full length of three feet. Three placed on the scales tipped the beam at exactly five pounds, one spud weighing 31 ounces. One square meal per potato best expresses the size of the big tubers, which come from what is known as the Divide country, the high ridge running out from the Front range at Palmer Lake and spreading fanlike eastward with a gradual descent from 7,500 to about 6,000 feet.

Some of the best products came from the highest points. Sudan grass, which is not generally recommended above 5,000 feet, has violated its family traditions by maturing at 7,000 feet and furnishing fine hay. Pinto beans, similarly considered a dry land crop for a mile high or less, were grown to perfection on ranches at over 7,000 feet, as shown by the exhibits. While the frost-free period at that altitude, according to weather bureau records, is comparatively short, plant life is less susceptible to frost than at lower elevations, and the intense summer sunshine makes for quick maturity, the mineralized soil for richness of color, high food value and flavor.

Eastonville Got First

There was strong competition for the community prizes, the Eastonville Farmers' and Homemakers' club winning first, a Van Glacklen lighting system for a hall, and the Monument Farmers' and Homemakers' club second, a No. 2 Clipper grain grading and cleaning machine.

There was little essential difference in the quality of the prize-winning community exhibits, but the Monument club was unable, so late in the winter, to find a suitable shock of corn. The Eastonville club brot in a shock right out of a field and it was set up with the general exhibit. This was the deciding factor in determining the award.

Eastonville was proud of its bundle of Sudan grass, which was from the Bar X ranch, owned by H. A. Gudger (7,000 feet). There were eight acres in the field that yielded about four tons of hay to the acre. This ranch had the distinction, during the National Western Stock Show, of topping the Denver market on lambs at $13.25, after a seventy-eight day feed on corn fodder and oats, the feed being grown on the ranch. At the time of the corn show Mr. Gudger was feeding thirty head of baby beef, which were showing a gain of two pounds a day on ground oats, corn chop, some silage and timothy and clover hay, all home grown feeds.

Dentist as a Farmer

One of the notable exhibits was that made by Dr. A. F. Cogswell, owner of the Arobine ranch near Calhan (altitude 6,500 feet). Dr. Cogswell, a dentist by profession, has been farming only since last April, but he says he has found a very close relationship between his former profession and his present calling, both requiring that one get "right down to the roots." He won first prize on ensilage, first on dry land alfalfa and first on white Australian corn, which was doing pretty well for a beginner. His ensilage was pronounced by Prof. W. E. Foard of the Agricultural college, to be perfect. Dr. Cogswell is running a hundred calves which were fat enough for the block, at the time of the show. Ensilage, straw and pasture was their ration. Dr. Cogswell's corn made about thirty bushels to the acre, and it was all put into a pit silo. The alfalfa plant which drew the prize measured forty inches in height and came from a field grown in rows, under dry farming methods of culture.

William H. Paul, a former Kansas farmer, now located at Eastonville, was in charge of that community exhibit and he was kept busy answering questions. He showed some splendid specimens of Silver Mine oats, bald barley, hog millet and other grains in the sheaf.

W. H. Hopper, whose potatoes attracted so much attention at the Calhan fair last September, and whose farming methods were given in detail by Western Farm Life in the issue of November 1, won first prize on late Ohio potatoes and second on Russet Burbanks.

The K. K. ranch (Kirk Bros.), Eastonville, were winners of first on Russet Burbanks and Red McClure potatoes and first on rye.

The Eastonville exhibit of native grasses attracted a great deal of attention, showing the excellent grazing which counts so much in making dairy and stock farming a success in the Divide country.

Monument Makes Good Showing

The Monument Farmers' and Homemakers' club put up a placard showing that the community had shipped out in 1916 by railroad 165,010 gallons of cream, 23 cars of oats, 5 cars of wheat, 15 cars of hay, 37 cars of cattle and 10 cars of cordwood. Much of the cream is taken out in auto trucks, and there is no record of the amount shipped in this way.

This covers farms lying at 7,000 to 7,600 feet altitude, these being largely self-sustaining besides furnishing a good cash income from cream and cattle shipments. The grain and hay are nearly all fed on the farm.

One of the remarkable features brought out in making the awards was the weight of the grains, which exceeded the standard by a good many pounds. For example, the bald barley that won first weighed 63 pounds per bushel, the prize oats 40 pounds, the fall wheat (turkey red) 61 pounds, the spring wheat (Marquis) 61 pounds.

A representative of the Armour Grain company, who visited the show, made special note of this in looking for grains upon which a premium is paid for the manufacture of breakfast cereals.

C. C. Garrett was the farmer who grew pinto beans at 7,000 feet, near Monument. I. R. Fulker of the same neighborhood and altitude showed some fine Canadian field peas.

L. C. Steppler, who won first on Pearl and Early Ohio potatoes, is one of the older potato growers of the Monument district. His farm is at 7,500 feet. He started growing potatoes in 1904 and has only missed one crop, that of 1911. For a series of years the potatoes were a failure on nearly every farm in the Divide country, but in 1915 and 1916 they "came back" and now, with seed selection and treatment and careful cultural methods, such as are advocated by the county agriculturist, the crop will remain one of the mainstays of the region, the soil of which seems to be especially adapted to tubers.

There was a considerable supply still in the cellars and growers were being offered as high as 5 cents a pound for seed potatoes.

The Monument club advertised for sale horses, purebred breeding swine, some pigs, a bull, hens and seed potatoes, and asked from farmers of other neighborhoods seed corn of the Parson's white dent, white Australian, Swadley and yellow dent varieties. Any farmer having seed corn for sale grown in similar altitudes may communicate with Ralph Walker, secretary-treasurer of the Farmers' and Homemaker's club, Monument, Colo.

Pinto Bean Improvement

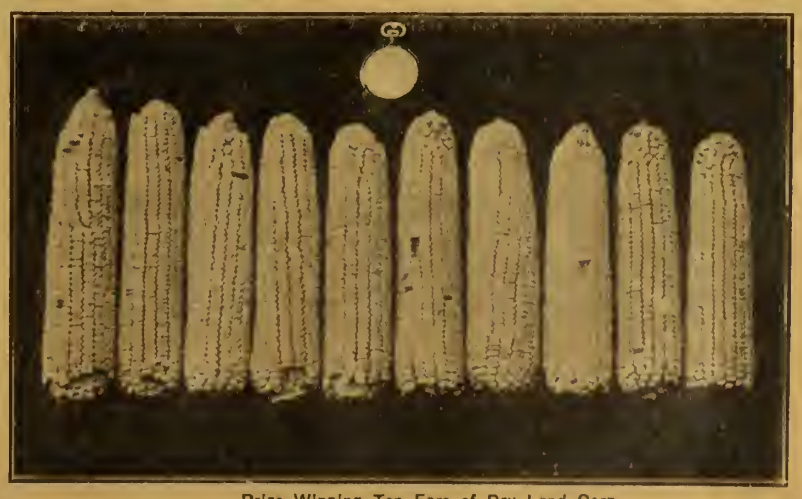
El Paso county has been one of the largest pinto bean shipping sections in the West, and much attention is being given improvement of that crop. It fell to the lot of a young woman to win first prize on beans, Miss Anna Williams, daughter of a dry-land farmer located in the Crow's Roost country, now on Motor Route A out of Colorado Springs. Her bushel measured up to grade, color, ripeness and trueness to type, in a very unusual way, its excellence being easily apparent to the judges. Her father, J. C. Williams, got first on ten ears of white dent corn and a relative living on an adjoining farm first on ten ears of yellow dent and first on bushel of seed corn.

Miss Williams grew six acres of pinto beans that averaged 600 pounds to the acre. The price offered growers at the time of the show was $7.50 per hundred pounds.

In order to stimulate better methods of production it was decided to divide equally among the five exhibitors whose beans scored highest the first and second prize exhibits. These prize beans consequently will go back into the hands of careful growers as seed for the 1917 crop.

A new feature was the competitive exhibition of cream in cans, in which H. C. Eeichel of Buttes was awarded first on sweet cream and J. H. Holman of Hanover first on sour cream. The cream was judged by Roud McCann, deputy state dairy commissioner, the awards being made on flavor, composition, acidity, appearance of package and contents. Cream producers listened

Continued on Page 21



Prize Winning Ten Ears of Dry Land Corn.

How to Produce Paying Crops of Pinto Beans

METHODS OF PLANTING AND CULTIVATION EXPLAINED BY EXPERT

ALVIN KEZER

Chief Agronomist, Colorado State Experiment Station

The Colorado State Experiment Station will shortly issue a bulletin on the subject of the Pinto bean. The accompanying is from the manuscript of this bulletin, published in advance so that growers may have the information before planting time. This installment handles the question of varieties, methods, time and rate of planting, cultivation, irrigation and other timely phases of the subject. Subsequent installments will take up the questions of harvesting, threshing, cleaning, marketing, etc.

Every farmer in the intermountain states located at 6,000 feet or less, either on dry or irrigated land, should preserve this and the subsequent copies of the magazine handling this important subject. Pinto beans are destined to become one of the leading cash crops of this region, especially for the farmer on non-irrigated land, because of their drouth-resistant and quick-maturing qualities, and the increasing demand for them as a staple food.

THE Colorado bean acreage has been steadily growing for the last ten years. The rate of growth in 1915 and 1916 has been as great as in the previous eight years. According to the Bureau of Statistics, United States Department of Agriculture, 38,000 acres were grown in Colorado in 1916—a jump from 21,000 acres in 1915, and 20,000 acres in 1914. The total production of the state in this period has jumped from 18,000,000 pounds to 25,440,000 pounds, in round numbers. In other words, the acreage has increased 81 per cent and the total production has increased in the same period about 24 per cent. The 1916 yield per acre was low on account of one of the worst drouths in the history of the Colorado plains. The years 1914 and 1915 were especially favorable, with high average acre-yields.

Beans are well adapted for growing in nearly all sections of the plains. Beans are a hot weather crop and as a consequence must be produced in the frost-free period. To successfully produce a bean crop, the season should be at least 95 days in length—95 to 100 days should be the minimum. A season of this length is seldom found above an average of 6,000 feet in elevation. There are localities where the slopes are favorable and the soils sandy, where the seasons are somewhat longer, permitting the production of beans at altitudes as high as 7,000 feet. If the season is bright and rather warm, some of the early varieties may be matured in as short a season as sixty days. A cloudy season, however, always lengthens the growing period. Cool, cloudy weather may extend the growing season, especially if rains accompany these weather conditions, or if irrigation is given. In such cases the season required for maturity may be as long as 130 days—too long for many sections even 6,000 feet in altitude.

The pinto bean, which formerly went under the name "Mexican," is by far the most important market bean, as it exceeds in acreage and total production all other beans produced. The seed industry beans, which are of numerous varieties, are the only ones which begin to compete in acreage with the pintos. These seed beans are largely produced under contracts with seed houses and consequently do not reach bean markets.

While beans may be successfully grown, practically anywhere on the plains, at altitudes below 6,000 feet, they are most abundantly grown in Weld county and Las Animas county, as these two regions possess the greatest acreages. They may be as successfully grown in other places, but development in other regions has not yet been carried to the extent which these two counties have made. The realization of the value of beans as a cash crop and the ease with which they fit into a rotation by throwing in an annual cultivated crop, will very likely tend to increase their general production.

Bean Varieties

The chief market variety is the pinto. The pinto bean was formerly called the Mexican. This name, however, is inappropriate as there are numerous other Mexican varieties. The name "Mexican" as a consequence did not mean any definite bean. Pinto applies to a specific bean.

The pinto bean is about the same shape as the kidney bean, so well known as a garden variety. It is also about the same size as the kidney bean, just mentioned. The pinto is buff-colored, is speckled with tan to brown spots and splashes. In many places in the southwest the pinto is called the Mexican tick bean. The name pinto, however, has become so well established that it should be universally used.

While the pinto is the chief market bean, other beans are grown and frequently do well. The navies are grown and produced to a small extent—both the pea-bean and the little navy. For garden purposes considerable quantities of kidney beans and "snaps" are grown. In most of our territory the season is too short for the proper development of limas. Consequently they do not figure in our bean problem to any extent. In parts of Colorado the Red Mexican or Pink Mexican, or Red Miner, is grown. This bean, however, is more extensively grown in New Mexico and Arizona and other points of the southwest than in Colorado.

Preparation of the Soil

Beans will grow on almost any kind of soil, from adobes to light sandy loams. They do best, however, on warm, sandy loams and sandy silts. Preparation of the soil for beans should commence prior to the season in which the beans are grown and should take in consideration proper rotation and manuring. The soil should be prepared by plowing. Wherever fall plowing may be done without danger of serious fall blowing, the soil should be plowed in the fall. In the spring this land should be worked down into a seed bed, making as good a seed bed as would be done for beets or corn. Where spring plowing is done, it should be done early.

Beans respond to good preparation. Consequently enough attention should be paid to disking, harrowing and compacting the seed bed. In some sections listing has been attempted as the method of preparing the soil for bean planting. Listing, however, is poor practice, except upon soils which cannot be safely plowed, because of their very strong tendency to blow. Where the land is prepared by listing, there is a tendency to slow up the development of the crop and delay maturity. In addition to these handicaps, beans planted by the listing method are more difficult to harvest; especially if there is damp weather during the harvest there is likely to be much damage to the pods by coming in contact with the soil. The tendency to pick up adobe soil or stones is increased at harvesting time. If listing is done at all, it should be very shallow so as to make the furrow to be filled about the growing plants as shallow as possible.

Planting Beans

CARE IN SELECTING SEED BEANS—The importance of getting good seed beans is sufficient to warrant special care in picking the seed. It is worth while taking a little extra care in Colorado on account of the short seasons. In many localities there is danger of beans being frost bitten in the early fall. Sometimes this light freezing will very materially weaken the germ, so that the crop will have very small germinating power, altho the frost may not be sufficient to injure the beans seriously for market purposes. Care should therefore be taken not to use beans for seed which have been frost bitten before full maturity.

Many of the diseases which affect beans leave spots on the beans themselves. One of the most effective remedies in combatting bean diseases is to pick out seed which is not affected by the disease. Accordingly, all seed beans should be hand-picked and discolored beans with strange colored spots should be rejected, planting only the bright, clean seed.

These statements hold, no matter what variety of beans are planted.

TIME TO PLANT.—Beans are a hot weather crop. Seed is injuriously affected if it is planted in cold soil. Germination will not take place while the soil is cold, and if the soil happens to be wet enough, rotting may take place before the soil warms up sufficiently to permit germination.

Beans will not stand any frost. The very slightest degree of frost is apt to kill them entirely. On account of these reasons, beans should not be planted until the soil is thoroly warmed up. In most Colorado sections this will be the last week in May or early in June. Successful plantings have been made as late as the first week in July, but the grower is tempting fate too much to make a practice of such planting, as frosts are likely to occur as early as the 25th of August.

While pinto beans and some of the teparies and a few of the Mexican and Indian varieties have been matured in sixty days or less, it normally takes about 90 days to mature a crop even for these short-season beans. In those seasons when frosts hold off until late in the fall, late planting will often make a crop, but frosts do not always hold off until late.

METHOD OF PLANTING.—If there is any considerable acreage of beans to be put in. a bean planter should be procured, or a corn planter with been plates. In Colorado beans should always be planted in drills so that the bean planters or corn planter should be so arranged as to drill the seed one in a place. It is possible to make use of a grain drill by stopping up the proper number of holes—in fact, many beans are successfully planted with such an implement. The type of grain drill having a revolving cup feed is adapted for this kind of planting.

Most of our grain drills have 7 or 8 inches between the drill holes. Stopping up three drill holes would therefore plant 28 inches apart, which is about right for irrigated planting. With a 7-inch drill, stopping five holes, that is, leaving open the first and sixth holes would plant 42 inches apart, which is about right for dry land. Some dry lands are strong enough to justify planting 36 inches apart. Stopping up four drill holes, leaving the first and fifth open, would plant 35 inches apart, which is about right.

Under irrigated conditions the rows should be about 28 inches apart. On dry lands, they should be from about 3 to 3½ feet apart. Under very dry conditions it is sometimes advisable to plant 7 feet apart and cultivate all of the intervening space. For irrigated conditions the drill should be thick enough to make one plant every 4 to 6 inches. This will require around 30 to 35 pounds per acre of seed for pinto beans. It will require a greater number of pounds for larger beans and a somewhat smaller number of pounds for the small pea-beans.

For dry land conditions beans should, under normal conditions, be planted in rows about 3½ feet apart and in drills in the row 10 to 12 inches apart. If dry land conditions are a little severe, or uncertain, the space can be made a little further in the drills, say from 12 to 16 inches. According to the rate of drilling, it would take from 8 to 20 pounds of seed to plant an acre under dry land conditions. For an average planting, probably about 15 pounds per acre will be used. Where the rows are made 7 feet apart, under very severe conditions, the planting should be 6 to 8 inches in the drills.

Of the many beans planted, only a few are put in by plowing shallow and dropping the beans in every third or fourth furrow, covering the beans by plowing and then packing and harrowing afterwards to compact the surface soil over the beans. This is not a good practice, but can sometimes be used in very small patches. Where large plantings are made, a bean planter adjusted to plant in exactly the proportion desired, should be used.

Cultivation

Beans of all varieties are rather shallow rooted surface feeders. Consequently all cultivation after the crop starts should be shallow. The most important part of the cultivation should be done in the preparation of a seed bed. Immediate cultivation should commence about the time the rows can be seen in the field. Where the stand is extra good, beans may sometimes be harrowed a time or two if care is taken to do this work when the young vines are perfectly dry. If the soil is a little moist and the vines moist, the young vines will be found to be quite brittle, so that harrowing will break off a large number. With the surface of the soil rather dry and the plants dry, the young plants are tough and will stand harrowing.

Some of the weeders on the market are excellent tools to use at this time.

The first cultivation with the regular cultivator should be the deepest. This first cultivation should not be over 3 to 4 inches deep. Later cultivations should be as deep or slightly shallower than the first cultivation. When the first cultivation is made, the roots have not extended very far into the space between rows. The stirring of the surface layer at that time by the cultivator makes a dry layer on top. If this is maintained the beans will root below the dry layer. Cultivation should be aimed primarily to keep down weeds and prevent the formation of a crust. Usually all cultivation should cease by the time the first pods commence to set. Sometimes the plants have grown enough so that cultivation should cease before this time. Care should be taken never to cultivate when the young bean plants are wet, as they are easily broken at such times, and when so broken are very susceptible to certain bean diseases. Under irrigated conditions cultivation should follow irrigation, as soon as the surface moisture and the plants will permit. The aim should be to prevent the loss of water by cultivation rather than to furnish water by excessive irrigation.

IRRIGATING BEANS—A study has been made of bean irrigation in eight Colorado counties. This study shows conclusively that it is fully as easy to over irrigate beans as to under irrigate them. As an average of all results obtained, two irrigations give higher yields than three or more irrigations. There was some difference as to quality of land—very open gravelly lands would stand more irrigation than sandy loams, loams and clay loams.

In irrigated regions beans should be given water when they show a need for water, namely, when the plants show a very dark green and commence to wilt during hot periods of the day. If the plants are a light green and growing vigorously, irrigation may often be delayed unless it is necessary to irrigate to get the water.

Beans in irrigated districts will usually be planted in rows around 24 or 28 inches apart. The first step in

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What One Farm Bureau Did During Its First Year

PRAIRIE DOGS AND GRASSHOPPERS LEAVE LAS ANIMAS COUNTY

WHILE we who are not tillers of the soil can only entertain you, we do have in our hearts a message of profound gratitude and appreciation for those who, thru toil on the windswept prairie, have mastered the difficulties of nature and have brought this county recognition as an agricultural district."

This was the message of greeting given the members of the Las Animas County Farm Bureau on the occasion of their second annual meeting in Trinidad February 24 by Judge A. W. McIlendrie of the district court. He expressed the sentiment of the business and professional men of Trinidad, who have shown their appreciation of the efforts of the farmers by giving moral and financial support to the work of County Agriculturist Charles E. Smith. The Trinidad Chamber of Commerce was the host of the occasion, Franklin P. Wood, president of the organization, acting as toastmaster. More than two hundred men and women, a large majority of them farmers, gathered from all parts of the county, which has an area equal to that of the state of Connecticut, were at the tables. One farmer came a distance of seventy-five miles, another fifty miles, to attend the meeting.

There was evident in the addresses and in the business session that followed, a note of progress and of good cheer, an intention to stand behind the hundreds of new settlers who have recently come into the county, and a disposition on the part of the older settlers to co-operate with the people of the trading center, because the city people have shown a genuine interest in the welfare of the rural districts.

Story of a Pioneer

Mayor Dan Taylor of Trinidad, an eighty-year-old pioneer, who was one of the "fifty-niners" in the Pikes peak region, gave something of his experiences.

"When I came across the plains about fifty-nine years ago," he said, "the last good farm we passed was about the region of Topeka. All the country this side of the Kaw valley was then a part of the Great American Desert and it looked a desert. Now we have farms all the way along. First we thought of this as only a cattle and sheep country. Now we know it can be farmed, because it is being done. When I came to what is now Denver there were just two houses, and they were on the west bank of Cherry creek. I thought as the others thought in those days, that this would never be a farming country, but I see it differently now."

In private conversation Mayor Taylor discounted modern day stories of the high cost of potatoes. He knew of one occasion when two food speculators from Denver came to the ranch of a friend of his at the head of Cherry creek—the Divide country which today is famous for its potatoes—and paid this farmer 35 cents a pound for his crop, to the amount of $30,000, enriching the farmer and later themselves when the hungry miners, prospectors and "tenderfeet" from the East gave anything and everything they had for a good meal.

It was like a voice out of the distant past to hear the pioneer tell of the gold rush days in which he was a participant and then to turn to the gathering of farmers who have made the desert bloom. His Honor the Mayor is living in the present, his eye clear, his step firm, his voice steady, his shoulders straight, his eighty years no burden either to body or mind.

Following the Mayor there was a talk by H. W. Bowman, typical of the new generation of progressive farmers, proprietor of Bowman's Sanitary Dairy, a model institution known the state over.

"The first robins have come, it is time to start your spring work," was a hint that he gave the farmers. He spoke of the Extension School, which had just been held at Hoehne, declaring that the farmer who took time to bring his family to that school would gain more than the one who remained at home because he had "too much to do." His plea was for more leisure for improvement of the mind which would, when applied, lighten the work of the hands.

Planning a Packing House

There is a plan on foot in Trinidad for the building of a packing plant and stockyards, which was explained by G. L. Beebe, one of the promoters. An option has been secured on a brewery plant. This is to be remodeled to suit the needs of a packing house for pork, mutton and beef. Poultry products also will be handled. Mr. Beebe told the farmers that from six to eight cars of meat were shipped into Trinidad every week, and that the livestock produced in the region was being shipped out to the packing centers. With 150,000 people to feed in the mining camps he said a prosperous packing business could be built up, which would also furnish opportunity for handling livestock in transit from New Mexico points, that could be shipped on east if the local market was not satisfactory.

Mr. E. G. Duling, president of the Farm Bureau during its first year, recounted the things done by the bureau, which included a campaign for eradication of smut in oats, a grasshopper campaign, a campaign for the destruction of prairie dogs, an effort to organize consolidated schools and other activities, most of them resulting successfully.

In regard to the treatment of oats seed for smut he pointed out that the loss in fields where no treatment had been applied to the seed was from 10 to 35 per cent. The grasshopper poisoning also was successful.

Drove Out the Prairie Dogs

In the destruction of prairie dogs the results were perhaps of greater economic value than in any other work undertaken by the bureau. This campaign proved 100 per cent effective. The prairie dogs were destroyed by the use of poisoned grain, the rodents being exterminated or driven from about 50,000 burrows. At an estimate of damage amounting to only 25 cents per animal the benefit from this campaign is figured by Mr. Duling as having amounted to about $12,500. This was done at a cost of about $125 for poison and grain, plus the labor and co-operation of all the farmers interested. He pointed out that before the farmers were brot together in such work, the individual efforts of one man to drive out the dogs only resulted in transferring them to the field of a neighbor.

County Agriculturist Smith was then called upon to tell of plans for the coming year, which he outlined briefly. The most important project is that of furnishing a credit basis for new settlers for the purchase of dairy cows and financing the purchase thru the Chamber of Commerce and the country banks, which is given more fully in another column. He also told of the pinto bean seed project that is to be worked out thru the boys' and girls' clubs, as has already been told in Western Farm Life. He expressed his appreciation of the support the business men and farmers were giving the county agent's work, declaring that there was nothing left to wish for in respect to co-operation from either city or country.

Director French's Prediction

Director H. T. French of the Extension department of Colorado Agricultural college gave the farmers something to think about in a brief talk. He predicted that in twenty-five years Colorado would have a population of two and one-half millions of people; that the United States would probably have a population then of one hundred and fifty millions.

"It will be a struggle for bread when that time comes and you farmers will be looked to to feed this population," was his message.

W. H. Kerr, state marketing specialist, explained the objects of the federal and state government in organizing a branch of the United States Bureau of Markets in Denver, telling the farmers that the bureau was at their service to assist in solving their problems.

Miss Miriam Haynes of the College Extension department told the farmers that no community could rise higher than the standards that prevailed in its homes and urged better co-operation with the women of the family in improving the home.

C. E. Lovett, state leader of county agents, spoke briefly on the value of constructive work in co-operation between business men and farmers, and commended the people of Las Animas county on the splendid way in which they were supporting the county agent.

At the close of the general session the bureau held a brief business meeting, at which Mr. Duling was re-elected president, R. C. Robertson vice president, succeeding Wm. von Buddenbrock, and J. N. Gibbs re-elected secretary treasurer.

A three-day extension school was held under the county agriculturist's supervision at Hoehne during the same week, at which the staff of lecturers included Prof. R. W. Clark, livestock specialist; Miss Haines, home economics; Philo K. Blinn, alfalfa specialist, and Prof. V. M. Cone, irrigation specialist, all of the Agricultural college.

Dairy Cow Financing

Hundreds of new settlers have come into eastern Las Animas county in the last year, taking up all the remaining desirable homesteads, or buying deeded land. Some have come to prove up and sell out, but most of the newcomers expect to stay and build up paying farms. There is no water for irrigation, consequently these new farmers, most of them unfamiliar with the practice of dry land agriculture, are in need of proper guidance. This they are receiving from Charles E. Smith, the county agriculturist, who has worked out a practical plan of financing the district for dairy cows that is just being put into effect.

This plan was submitted to the Las Animas County Farm Bureau at its annual meeting and was adopted. Only carlots of dairy cattle are to be brought in under this plan, such cows to be of good breeding and disease free. The fund will be available only to communities where farmer's clubs have been organized, so that the livestock committee of such club may

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Meeting of County Agriculturist With New Homesteaders.

One of the Four Famous Farm-Smiths

CHARLES E., one of Colorado's four famous farm-Smiths, presides over the agricultural destinies of Las Animas county, eats yellow-legged chicken with the farmers, keeps the business men active in co-operating with the producer, aids the new settler with advice and suggestions and makes himself generally useful as county agriculturist. Large experience in educational work and a thoro scientific training, coupled with the good qualities of a mixer, insured success from the start.

Mr. Smith, who was born and raised on a farm, received his degree of Ph. B. at Albion college, Michigan, following which he served six years as principal of schools. Then he continued his studies at Cornell university, where he received the degree of M. A. in geological sciences, later completing enough resident work at that university to qualify for the degree of Doctor of Philosophy, for which, however, he did not prepare a thesis. He then took up educational work in Louisiana. After a year he became ill with malaria, forcing him to come West. He was employed by the Colorado School of Mines as an instructor in geology and mineralogy for two years and assistant professor for four years. During this period he spent a large part of his summers with the Colorado State Geological Survey and, for investigational work done in Carboniferous Formation, was listed in the "American Men of Science."

Following this he spent two years on a farm and three years as special teacher in sciences and agriculture in a high school, whereupon he went to Fort Collins, for seven months' further study that secured for him the degree of Bachelor of Sciences in Agriculture.

In February, 1916, he was appointed county agriculturalist in Las Animas county, where he soon learned that his varied training and experience were valuable in working out the many problems that confront the farmers in that section. So, for example, the geological training has been of great benefit in helping settlers in the location of a dependable supply of water from deep wells.

Is Smudging a Paying Practice

GRAND VALLEY GROWER GIVES ANSWER

ALFRED M. WILSON

DOES it pay to smudge? By focusing attention exclusively upon the fact that some growers have at times saved their fruit by smudging, it is easy to give an emphatic affirmative answer. By focusing attention, on the other hand, on the fact that some growers have at times smudged, and yet lost their fruit, it is equally easy to give an equally emphatic answer to the negative. Hence there are, at least in the Grand Valley of Colorado, two classes of growers who are very positive in their decision on this question: those who believe in the efficacy of smudging and those who do not. It is impossible to reason with either of these. I address what I have to say upon this subject to the large body of growers who are in doubt as to the value and wisdom of smudging.

The facts which the two classes of growers referred to emphasize are important facts; but the question does not admit of so easy a solution as these growers seem to think. There are at least four other factors which must be taken into consideration. Even then the answer may not be an unequivocal yes or no. These considerations are (1) the outlay for equipment, fuel and labor; (2) the weather conditions; (3) the condition of the fruit itself, and (4) the probable price of the fruit.

The outlay for equipment will be large or small, first, according to the number of smudge pots used, and, second, according to the kind of smudge pots used. It would not pay to smudge isolated trees or a few trees or even a single row of trees. Only blocks of several hundred trees can be smudged to advantage, and at a reasonable expense. For our purpose we will assume that the block under consideration consists of a thousand trees, so arranged that there are forty trees in file and twenty-five in a row. For every tree there should be at least one smudge pot. That would mean for this group one thousand pots. Then if the group is isolated and not in touch with other groups that are to be smudged, each outside tree should be provided with two smudge pots instead of one. That would mean for the group arranged as we have assumed, one hundred and thirty additional pots to be provided for, which would make the total number of pots or baskets to be bought one thousand one hundred and thirty.

Cost of Equipment

Having determined the number of pots required, we are in a position to give at least an approximate estimate of what the equipment will cost. If oil is used, the pots will cost from fifteen cents up to eighty-five cents per pot. One of the best pots can be had, I understand, for forty-five cents. The outlay for oil pots for a block of a thousand trees would, then, vary from $159.50 up to $960.50. The outlay even for the forty-five-cent pots would amount to $508.50. Coal pots can be had for twenty-five cents a piece; but if coal is used, a wire basket made out of Ellwood chicken wire will answer. This wire is known to the trade as Specificaton L. The cost of such a basket, including material and make, need not exceed ten cents. On this computation, the outlay for coal smudge pots would amount to $278.25; but if the wire baskets are used, the cost would total only $113.

Again, if oil is used, another item to be added to the cost of equipment would be the outlay for a cistern in which to store the oil. A cistern for this purpose would cost at least $100. Oil-using growers frequently, also, keep in store as much as 5,000 gallons of oil. That amount, whether at five cents a gallon as formerly or at present higher prices, would represent no small outlay.

I have not forgotten the old saw that nothing lies like figures. Yet there are two stubborn facts which cannot be ignored. Their significance it is for each and every grower to decide for himself. First, the money invested in equipment, whether for oil or coal, represents so much tied-up capital. Second, the interest on this tied-up capital is a fixed annual charge against the gross income from the sale of the fruit.

Whether one shall use oil or coal is largely a local question, and of the relative cost of the two fuels in each locality.

Labor a Big Item

I can only refer to the expenditure for labor in handling the smudging on a given night or nights. That expenditure, whether great or small, is together with the cost of the fuel used an additional charge against the gross income from the orchard for the year in question.

So much (1) for the fixed outlay and (2) for the additional outlay when the grower actually smudges. But the weather conditions must be considered. These conditions may be such as to make smudging on a given night a loss of time and labor and money. For example, when the wind is blowing with such velocity as to dissipate the heat and smoke, or when the night is so cold that no amount of smudging will raise the temperature. Such conditions, though unusual, have at times prevailed in the Grand Valley. Growers have tried to buck such conditions, but to no purpose. They lost their fruit just the same as the growers who did not smudge. Then there is the waste involved in smudging when, as the grower later sees, it was not necessary for him to smudge. That has happened time and again in the Grand Valley.

Then the condition of the fruit itself is an important factor. Fruit buds when dormant are more resistant to cold than at any other time. When the buds are in bloom, their power of resistance is much less, and yet it is at that time much greater than when later they have shed their petals and other outer covering.

All these factors enter into the consideration of the question, and one other also, namely, the probable price of the fruit. This, indeed, is the decisive and deciding factor. If it is probable that the fruit is going to sell at too low a figure, then for that year smudging is too much of a gamble for a level-headed grower to indulge in. If, on the other hand, the probabilities are that fruit is going to command a good price, then one might be justified in trying, by smudging, to circumvent the elements.

I confess that smudging as a business proposition does not appeal to me; and yet I expect to be prepared this spring to smudge and to smudge hard if it should be necessary to do so; for while smudging may, as a business proposition, be a losing card, yet I shall be saved the worry and strain involved in watching the mercury night after night, as I have done, dropping steadily and stealthily down towards the danger point and at times even below that point. This may be a non sequitur; and yet it is the conclusion to which I have deliberately come.

Killing Prairie Dogs By Auto

Last week, while at Eldorado, we saw Mr. Posey and Mr. Barnard killing prairie dogs with automobiles. A rubber hose about 10 feet long and just right to fit over the exhaust pipe of the auto is used to carry the gas. One end is put over the exhaust pipe and the other is stuck into the burrow. Dirt is packed around the hose in the burrow until the mouth of the hole is filled. The hose is withdrawn, and the hole it leaves is filled. By running the engine all the time, the burrow is completely filled with gas from the exhaust pipe by the time the hole is stopped with dirt. One man runs the auto and one handles the hose. Two men treated 30 acres of dog town in one day, using ten gallons of gasoline.—J. E. Payne, Frisco R. R.

For livestock, poultry, acres and ranches, machinery, help wanted, kodak finishing, and miscellaneous articles, see the Farmers' and Stockmen's Exchange, pages 20 and 21.

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Fig. 1518

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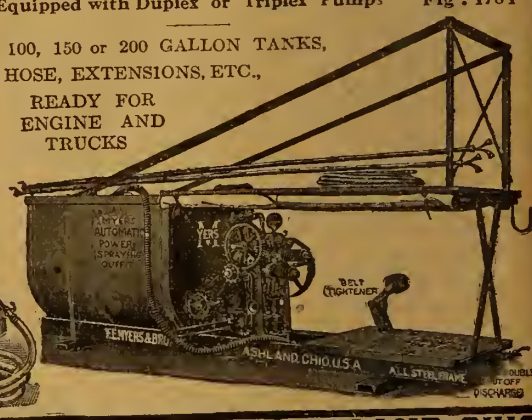

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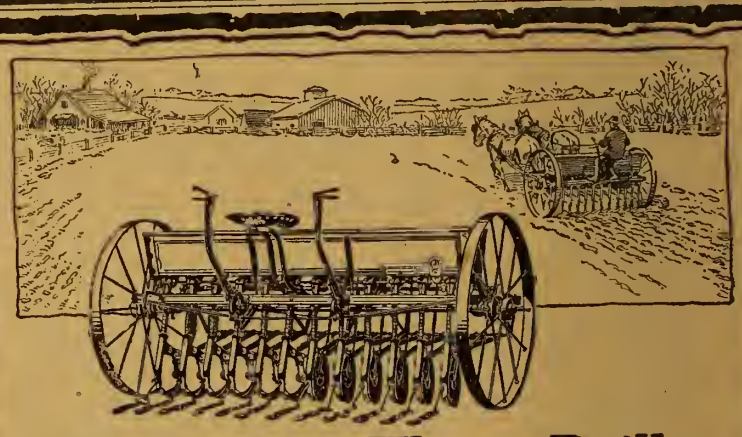

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Sow Barley in Alfalfa Fields

It is a mistaken idea that alfalfa does not need cultivation. Alfalfa, like other crops, grows best when tilled. Many alfalfa fields are becoming foul with weeds and are decreasing each year in yields.

Cutting Barley and Alfalfa Field at Silt, Colo.

As early as the ground can be worked in spring cultivate the alfalfa field both ways with an alfalfa cultivator, or spring tooth harrow or disk. After a good seedbed has been formed, plant with a grain drill forty pounds of bald barley seed per acre. The barley will take the place of weeds and grow along with the alfalfa. When the alfalfa is in early bloom ready for cutting, the barley is just in the dough, which is the most profitable stage to cut for hay. The barley greatly increases the yield and you get a better balanced ration than you do with alfalfa or barley alone.—R. C. Allred, Agriculturist Garfield County, Colo.

Proper Planting of Trees

E. R. PARSONS

If the roots of nursery trees when dug for sale are properly protected from drying out, from the propagating rows to the farm, and then correctly planted, they will all grow.

The loss in transplanting occurs always for the same reason—too much exposure of the roots to the air. This may be the fault of the nursery. They are sometimes left out in the field for hours after being dug and without being heeled in, or packed for shipment, and they are often shipped tied up with a wisp of straw instead of being properly boxed. When a bunch of trees arrive their roots should be soft, supple and sappy; but if they are hard and dry and difficult to bend many of them will probably never leaf out.

When the farmer receives them he should sprinkle the roots, and heel them in. If the roots look bad, and the bark is at all shriveled, they should be buried whole in damp earth until they plump up. When planting, a sprinkler and a gunny sack to cover them should be taken along to keep the roots damp until safe in the ground.

The next thing to attend to is to make a good connection between the tree and mother earth, so that the soil solution can be absorbed. This is done by tamping the earth as solidly as possible without injury to the roots. A tree planted in loose soil cannot absorb moisture until fresh roots have grown and the hairs on these have become imbedded in solid soil, and for this reason is very likely to die before becoming established; on the other hand, we find by experiment that a tree will commence to sprout at once when the soil is solidly packed about the fibrous roots which it possesses when it comes from the nursery.

A shovelful of loose earth should first be placed in the hole and the roots pressed down into it; then the balance of the dirt is gradually filled in tamping as you go, leaving the top two or three inches loose for a mulch.

The next point is cutting back. The top of a tree must balance the root. In digging the nursery rows three-quarters of the roots are left in the ground, consequently we must take off about the same amount of top. All trees should be cut back regardless of variety. All upland trees that do not winterkill are easy to raise on the dry farm because they root deep in the subsoil, where moisture is easily conserved by plowing and cultivation. Even in planting shade trees around the house, nothing less than a row should be set out, so that the strip may be plowed and cultivated, for potholed trees seldom live.

The evergreens which grow all over the mountains and foothills without any assistance from man, will grow equally well in your back yard or farm. The jackpine, yellow pine, red spruce or Douglas fir, the blue or silver spruce and the juniper all grow in the dry farming regions without irrigation or cultivation in their natural habitat and will do very well on the dry farm with plenty of cultivation. They may be purchased at the nurseries all ready to plant with their roots in a ball of earth.

Hog Management Bulletin

"Hog Management" is the title of an extension bulletin just issued by Colorado Agricultural college. It is No. 114. The author is R. W. Clark, extension specialist in animal husbandry. This bulletin takes up in a concise and practical way all phases of hog production including selection of breed, selection of the sow and boar, selection from the litter, grading, cross-breeding, age to breed, breeding season, feeding the brood sow, housing, precautions against hog diseases, etc., etc. Every farmer should apply to the College Extension Department at Fort Collins for copy of this bulletin, which will be sent free.

Sow Sudan Grass Late

I sowed Sudan grass about the 20th of May, 1916. The ground was still too cold and the weeds grew faster than the grass, so I ordered more seed and went in with the disk and harrow and got the ground in fine shape and re-sowed the field, finishing the 18th of June. I had a fine crop of hay. I have a large span of mares and when the mower was running you could just see the tops of their heads as you looked across the field. It made such fine feed, all the stock were fond of it. It is excellent for milch cows.

I consider Sudan grass the best forage crop we have for this dry farming district. I was the only one in this locality that sowed last year, but after seeing my crop of hay all the neighbors are planning on sowing some Sudan grass this year.

Don't sow before June 10th is my advice. Put plenty of work on the land to get it in fine tilth. I used a five-hole drill, but closed two holes, using three for the sowing.—G. W. Dickey, Willard, Colo.

Agricultural Statistics is a new quarterly publication containing simplified tabulated statements, showing at a glance the farm production of the United States, showing how much each state raises, the quantity per acre, etc., during a series of years. It also gives intelligent comparisons concerning each branch of livestock, state by state, providing a handy encyclopedia regarding American agriculture issued four times a year, with proper revisions each quarter. It is issued by the Hale Publishing Company, St. Louis, Mo.

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All in Endurance

All the Super-Six records—for speed, hill-climbing and long-distance—were won by this motor's endurance. They mean that motor wear and friction are reduced to almost nothing.

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That is what you want above everything else. You want less wasted power, less wear, less friction. That means, of course, supreme performance. But it also means supreme economy.

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The Super-Six invention, in all probability, doubles the life of a motor. It saves the power which was wasted in friction. And this year we add a new gasoline saver which saves a great deal more.

No other fine car gives such value as the Hudson. No other car has a motor which compares with this. A higher-quality car is impossible. Yet note how far the Hudson undersells many cars that it out-performs.

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Horse Sale at the Jarosa Ranch

GOOD FIGURES BROT BY HIGH CLASS ANIMALS

H. S. GROVES

THE fourth annual sale by Howard M. Jay, proprietor of the big Jarosa ranch at Longmont, Colo. was held in the new sale pavilion in Longmont on March 5. The day was ideal and a large crowd that had come in automobiles, buggies and by train was at the pavilion early in the day inspecting the large offering of Percherons and Belgians that Mr. Jay had brought in from his big ranch.

The auction of registered horses is a new departure in the West. The people have been so accustomed to raising range horses at practically no expense that it was no small undertaking to educate them to the importance of producing pure-bred animals. Heretofore the price for registered horses has been almost prohibitive. The custom has been for agents of Eastern companies to take a registered horse out into a farming community, organize a horse company, give an influential farmer a special inducement to get his neighbors to join and the horse would be unloaded on the company at several times his value. In many cases the horse proved unsatisfactory, but the original owners being in the East, no redress could be had.

Some years ago Mr. Howard M. Jay, after carefully looking over the country, became convinced that there was an opportunity in the West for building up a big pure-bred horse industry and by giving the farmers good value for their money he felt that the industry could be rapidly expanded. Accordingly he purchased a large tract of irrigated land at the outskirts of the city of Longmont and stocked it with the best Percheron and Belgian blood obtainable. His remarkable success has more than justified his undertaking and his sales have increased in magnitude each successive year as his reputation for quality stock and fair dealing has become advertised. In the meantime he has exhibited his stock at Western fairs and stock shows where it has always been in at the winning.

Importer and Breeder

Mr. Jay both imports and raises pure-bred horses, a greater part of which are registered and colts subject to registry. A Western farmer can go to the Jarosa ranch, select his individuals on a guarantee and buy them at their real value, which is usually much less than what they would cost him if he should go to a big Eastern importing company. Then, too, the animals purchased at the ranch are acclimated and ready for service. The older horses are well broken and are worked during the growing season in the beet and alfalfa fields.

Preceding the opening of the sale H. H. Simpson, county agriculturist of Boulder county, made a brief statement in regard to the special opportunity offered for breeding good draft horses. On account of the European war, the supply of horses has been materially reduced. The foreign supply is practically exhausted and in the future all nations must look to America for their breeding stock.

Although motor power has undergone rapid development during the past few years, nevertheless the demand for good draft horses has steadily increased and last year their value was estimated at more than $24,000,000 greater than in any preceding year.

The first offerings were aged mares, none of which had been fitted for the sale ring, but were brought in from the farm in their rough coats and in working condition. Preceding each sale Mr. Jay gave a description of the animal, mentioning blemishes, if any, and fully guaanteed the animal as represented. If the horse was broken to work, the buyer had the privilege of trying it out before taking from the place and if unsatisfactory he would not be required to take it away. Every assurance was given that all sales would be strictly on the square.

The Bidding Was Spirited

The bidding opened in a spirited way—in fact, there being nearly a hundred head to dispose of, no unnecessary time could be consumed on any one animal. The mares, most of which were safely in foal to registered stallions, were bid off rapidly, the prices ranging from $180 to $595. There were three sales made at $180, $200 and $210—all mares that were rather thin in flesh and consequently did not make a favorable impression, although they possessed the quality and perhaps were as good animals in every respect as those that were bid at $500 and more. These animals were all of excellent quality, big boned and good style. In most cases Mr. Jay offered to give the purchaser $200 for the foal at weaning time. This brought the animals within a very reasonable figure and farmers were not slow to take advantage of their opportunity.

A number of the fine mares offered merit special mention:

Gypsie Queen, 122985, foaled April, 1915, was a handsome black, and grand champion mare at Colorado and New Mexico state fairs over all ages and stood second in her class at the National Western Stock Show. She weiged over 1,500 pounds, and after spirited bidding was sold to Mr. McGraw of Chugwater, Wyo., for $595.

Ollie, 119645, foaled April, 1914, was a perfect individual, good bone and quality, stood third in her class at the National Western Stock Show, sold for $505 to a breeder at Johnstown, Colo.

Daisy, 3202, was a handsome brown mare, foaled June, 1912, good size and bone, well broken and stood third in her class at National Western Stock Show, was sold to J. D. Brunton of Glendale Stock Farm, Aspen, Colo., for $495.

Lollie, 12117, foaled May, 1903, was a beautiful black show mare, a perfect type, good flesh, sold to Mr. Howard of Hilltop, Colo., for $405.

One or two foals from these mares will pay the original cost and the purchaser will still have the mare which will be a good breeder and work animal for several years to come.

Octovia, 55887, foaled May, 1907, was a fine black mare, in good flesh and safely in foal to an imported stallion, fully guaranteed, sold to Mr. McCloud, Fort Collins, Colo., for $425.

Jessie, 55767, foaled May, 1914, a young mare of fair quality, lots of bone, sold to Cris Dowel, Boulder, for $340.

A beautiful bay yearling filly out of imported sire and dam, fine carriage, good bone, sold to Ray Reynolds, Longmont, Colo., for $295.

Stallions Sold Well

After fifteen minutes for lunch, which was served in the pavilion by the ladies of one of the local churches, the sale was opened on stallions. The first offered was Brilliant, 105393, a handsome black 3-year-old, strong in blood of Brilliant, lots of quality and weight, recorded by the P. S. of A. Bidding on this animal was quite spirited, and as the proprietor, Mr. Jay, guaranteed 60 per cent of the colts of all his stallions, the purchasers did not hesitate to bid lively. Brilliant was sold to James Smith of Boulder county for $1,735.

The next was Beloit, 29124, foaled June, 1914, a beautiful gray colt, great size and quality, sold for $1,775.

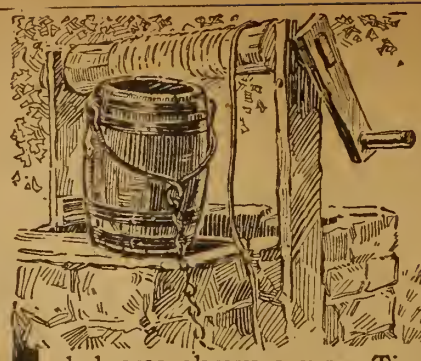
Hector, 89984, a perfect type Percheron, good quality and style, sold for $825 to Jake Spore of Johnstown.

Buster, 10049, dark gray, white mane and tail, foaled August, 1912, sold to Mr. McCloud for $675.

Vergoine II, 108896, foaled May, 1913, a beautiful gray, a real show stallion, which was scored first by the college teams at the National Western Stock Show as the most perfect horse at the show, was a perfect type of Percheron, excellent action, fine conformation and created much admiration. He was sold to C. D. Owen, Greeley, for $1,775.

A beautiful black yearling colt of good bone and action sold to Mrs. Mattie Dowel, Lafayette, Colo., for $250. Another black yearling of good style and bone sold to Bert Hart, Longmont, for $265. A number of promising colts sold to farmers who felt that

Continued on Page 14



How Old was The Old Oaken Bucket?

THE "iron-bound" bucket that hung in the well was covered with moss but the hoops were always tight and the bale was always secure. Time left its impress on the wood and on the metal but *rust* did not eat through the iron although the bucket was subjected to the severest of exposures. The iron was *pure* iron and pure iron resists rust.

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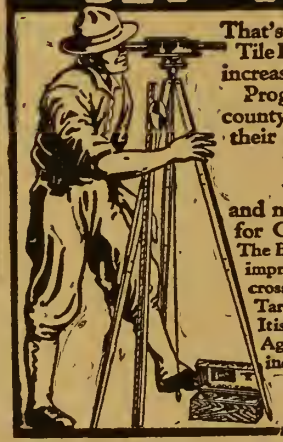

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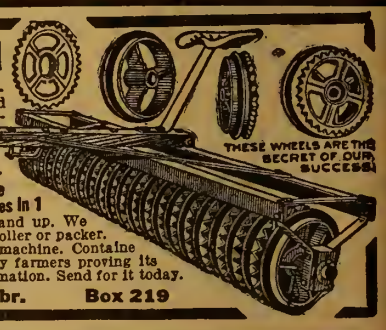

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A Wyoming Club Girl's Record.

NET PROFIT $83 ON TENTH OF AN ACRE

ONE of the best records ever made in the West by any member of a Girls' Garden and Canning Club that credited to Hazel McKelvy of Powell, Wyo., a high school girl, who won the state championship.

Ivan L. Hobson, Wyoming state club leader, says of her work: "Hazel McKelvy is to be commended not only for her ability as a gardener, and as a business woman, but as a community leader. It was her words of encouragement and enthusiasm which held the Powell club together at critical times. She is the kind of young woman who will stand for the better things in a community."

Hazel McKelvy, the Powell, Wyo., Girl Who Won State Championship in Gardening and Canning

On one-tenth of an acre, the plot measuring 132x33 feet, she produced, under irrigation, 2,533 pounds of vegetables at a total cost of only $7.72. She canned, used and sold products to the total amount of $90.10. Her net profit, after deducting all expenses, was $82.38, or at the rate of $823.80 per acre.

This is the story she tells of the way the garden was handled: "In the early spring I prepared the seedbed by putting fertilizer on the ground, plowing it under, leveling and harrowing it and then corrugated it for planting. I planted my first seeds the 10th of February in window boxes and a little later planted some in the hotbed. My seeds in the hotbed did not germinate well, so I had to depend on those in the window boxes. When the plants became large enough I transplanted them into pots.

"The first of April I planted the early garden, such as radishes, lettuce and onions. The 25th of May I transplanted most of my tomatoes and cabbage and a few other plants to the garden. Some of the tomatoes which I had transplanted to pots were ten and twelve inches high and a few were in bloom. None of my plants were killed by frost, as I was very careful to keep them covered.

"We had our first early garden the 5th of June and from that time on until the last of September we had an abundance of vegetables for home use, canning and sold a great many. I had my first tomatoes the 18th of July and cabbage the 22nd. My cabbage had to be treated for the worms, but my other plants were not bothered.

"I canned all my vegetables by the cold pack method and have been able to can successfully every vegetable I have ever grown in my garden. I always can the vegetables the day they are harvested.

"We have held our club meetings every two weeks during the summer and at each meeting have talked concerning our work. We have had two field meetings, one of which was held at my home.

"By having part of the home garden we were able to have fresh vegetables when we wish, and by raising them can have them earlier than to buy them at the store, as early vegetables are very expensive. I enjoy club work a great deal and would like to be in it again next year. I am always learning something new."

The items that went into the expense of growing were as follows: Rental of plot, 50 cents; labor at cost of 10 cents per hour; manure, $1 for one-half ton, and minor sums for spraying and cost of seed. This was Miss McKelvy's second season in club work. In 1915 she won second place in the state contest. Two ewe lambs were the prize she got from the state fair for the 1916 work.

Farm Loan Information

The Federal Farm Loan Board has announced the following officers for the bank of the Eighth district, which has its headquarters at Omaha and which comprises the states of Iowa, Nebraska, South Dakota and Wyoming. They are as follows: D. P. Hogan, Massena, Iowa, president; J. M. Carey, Cheyenne, Wyo., vice president; Frank G. Odell, Omaha, secretary; E. D. Marcom, Sioux Falls, S. D., treasurer; Warren C. Baker, Mitchell, S. D., director; M. L. Corey, Hastings, Neb, registrar and attorney.

The correct title of the bank serving the Ninth district, which includes Colorado, New Mexico, Kansas and Oklahoma, is "Federal Land Bank of Wichita." Temporary quarters have been leased by the bank in The Beacon building, Wichita, Kan., but the officers are distributed on three floors, because no suitable rooms could be found on one floor.

The following questions have been answered by the Farm Loan Board:

What is the judgment of the Farm Loan Board as to compensation for the loan committee?

This depends so much on the size of the association that no fixed rule can be made. Since this is a co-operative banking system, the Farm Loan Board desires that the work, as far as possible, be done without expense. The board believes that in a small association it will not be necessary to pay the loan committee any fees. The board believes that in very few cases will it be necessary to pay the loan committee more than actual expenses.

What is the judgment of the Farm Loan Board as to the compensation to be paid the secretary-treasurer?

This also depends so much upon his relative duties as fixed by the size of the association that it is difficult to name an amount. This compensation should be based upon the time actually required to perform the work of the association.

May one man, by owning two pieces of land, become a member of two associations and borrow in excess of $10,000?

He may become a member of two associations, but the total amount of his loans may not exceed $10,000.

May an association operate across state lines even if both states are in the same bank district?

No, no association may designate territory in two states, in which loans can be made.

In a general way, what sort of abstracts will be required Must they be prepared by bonded abstractors, or is this a matter for the judgment of the land bank officials?

It is a matter for the federal land banks to determine. Any abstract of title sanctioned by ordinary sound business usage in the community will be sufficient under this act. The federal land banks will recognize any system of title registration approved by the law of the state in which the land is located.

What will be the size of the bond of the secretary-treasurer?

This will depend upon the size of the association. The bond need not be large enough to cover the aggregate amount of money borrowed by the members of the association because this money will be transmitted in such a way as never to be in the exclusive control of the secretary-treasurer. It should be large enough merely to cover the interest and amortization payments, called the installments, as well as the deposits likely to be in the hands of the secretary-treasurer at any one time.

Read the advertisements. They contain valuable information. When you write to advertisers be sure to mention Western Farm Life.

Western Farm Life

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Food Preparedness

Let us follow the advice of Doctor H. E. Horton, agricultural expert for the American Steel & Wire Company, and "stare some facts in the face." In one of his recent crop reports, which have been of vital importance as an agricultural barometer in these troublous times, he declares that the available food supply is decreasing in the face of a rapidly increasing population. He gives us the figures, compiled from government reports, and they are alarming.

They do not take into account the war or exports of food products. They simply tell the story in figures of our growth in population and mouths to feed and the relative decline of good things to put down those mouths.

Take potatoes for example. Everybody is thinking and talking about potatoes. They are not going into export trade. The crop shows a decrease of forty-five millions of bushels in 1916, compared with the previous year. Our potato consumption is down to the lowest point of any big nation, the per capita figure being 3.5 bushels. England, Germany and France, in normal times, consume three to four times that quantity per capita. It is apparent that we do not eat more potatoes because they are not grown, and that potatoes are high because they are scarce.

Doctor Horton's figures also apply to more important products—namely, to meat, butter, cheese and cereals. Production is not keeping up with normal consumption and the increased rate of population. Consider the figures plus the fact that some of these products have entered largely into the export trade, due to war demand, and we have a better understanding of why food riots are possible in this country.

Regardless of our own direct connection with it, the war in Europe is a condition we must continue to face. We cannot live to ourselves. We must continue to take part in feeding the millions that are facing actual starvation. We may be forced to undergo some hardships ourselves in the not distant future.

And what is the conclusion? There is only one certainty that stands out against uncertainties of the present and that is, there will be at least one more season of abnormal demand for all food products. Farmers should not let high prices of seed cause them to materially decrease the acreage of any crop that can be converted into food or feed. Every ounce of bread and meat that we can supply will be needed to help feed the world through the next twelve months of disturbance.

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Business Man and Farmer

It is a significant fact that farming is most progressive in sections where the business men take an active interest in the development of rural life. This is so because the farmer is himself a business man. Left to work out his problems alone, his progress necessarily must be slow. Associated with other farmers in some progressive organization, there follows an exchange of ideas and opinions and a widening of his rural acquaintance that broadens him and gives him greater opportunity for developing his own business. Affiliate his farmers' organization with a central organization of business men at the trading point, and this broadening influence extends to the vital problem of marketing.

The same applies to the business man in any city that relies mainly on agriculture for sustenance. The merchant whose only concern in the country is to sell the farmer goods at a profit is, ethically speaking, a failure. If his competitors are wise enough to see the point and he isn't, he soon becomes practically a failure, insofar as his country trade is concerned.

There is a cause for the very evident tendency of the farmer and business man to co-operate. Farming is the most important of all occupations. When farming stops the world starves. Farming, too, is the most uncertain of businesses. It is a gamble from furrow to barn, from barn to market. The rewards vary greatly; only the toil and expense are certain. To assist him in overcoming Nature's handicaps and obstacles the farmer has expert knowledge available. To take an interest in the marketing side of his business is the duty of the merchant, because his own prosperity is dependent upon that of the farmer.

That each may understand the other's problems and aims it is well to have joint meetings occasionally of organized business and organized farming. It is well to encourage better farming by the arrangement of such exhibitions as the El Paso county corn show, a report of which is given in this issue; or the entertainment of the County Farm Bureau by the business men as was done at Trinidad recently.

The Colorado Springs Chamber of Commerce, known nationally because of its publicity work in bringing tourists to Colorado, never loses sight of the fact that, however important the eastern tourist is as an asset to the Pikes Peak region, it is farming at the foot of that famous mountain that sustains Colorado Springs and makes its prosperity an all year round proposition instead of a three months' season. Therefore, a working agricultural committee is kept busy; premiums are offered for the annual Corn show; the members of the Boys' and Girls' Club are entertained as tho they were lords and ladies from abroad; the county agriculturist finds the business men behind him with their dollars, their moral support and their personal help when he needs it.

In Las Animas county there is much the same condition, though the work is newer. Trinidad business men are keen for more coke ovens and greater development in the coal camps, but out there on the plains in eastern Las Animas are hundreds of new settlers who want to help supply food for the miners. Trinidad knows itself and its opportunities as the great market where the miner and farmer must meet to barter and trade, consequently it is behind such a movement as that of financing the dairy cow project for these settlers. There are other communities in the mountain states equally alive, but a majority still need to be awakened to the opportunity that confronts them. We say it again: farming is most progressive where business men take an active interest in the development of rural life. It pays for all concerned.

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Preserve the School Fund

Something like three-quarters of a million dollars, which should today be a part of the permanent income fund for the benefit of the schools of Colorado, has been frittered away in past years by reason of a defect in the statutes that is about to be corrected. There is pending in the Colorado legislature senate bill No. 118, by Senator Fincher, providing for the disposition of all rentals and royalties received by the state from the leasing of its mineral lands. This measure specifies that such rentals and royalties shall be placed to the credit of the permanent school fund, with the exception of a deduction of not to exceed 10 per cent for the expense of administration of the lands. The act does not apply to rentals received for the surface, but only for the leasing, on a rental or royalty basis, of the mineral rights. In the past such moneys have gone into the income fund and been disbursed. Justice to the school children demands that these revenues be held intact, as a part of the permanent fund, the interest from which is used for school maintenance. There should be no opposition to this measure when it comes up for action.

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Acre War Relief Plan

The committee appointed by the Colorado Farmers' Congress to handle the acre war relief plan, suggested by O. F. Gardner, former president of the Congress, is making plans for carrying out the project. Further announcement in regard to the matter will be made as these plans mature. The members of the committee are as follows: Charles L. Hover, Longmont, chairman; David Halls, Mancos; Prof. H. T. French, Fort Collins; George McCarroll, Denver; R. M. Haythorn, Eaton; J. G. Evans, Fleming; L. M. Rogers, Grand Junction; Frank Eldredge, Durango; D. E. Newcomb, La Jara; George Bushyager, Craig; L. F. Brammier, Burlington; H. W. Bowman, Trinidad. Farmers interested in the matter may communicate with any member of the committee. Coupons appearing in our issue of February 1st and returned to us with signatures of Colorado farmers have been turned over to the chairman of the committee. Further details will be furnished these farmers in due time.

Briefly, the plan is to contribute to the American Red Cross for war relief the proceeds of one acre of the 1917 crop. There will be need for every dollar's worth of food or every dollar in cash that may be contributed in this way. The world has not seen so much want and suffering since the Dark Ages.

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The Banker and the Loan Law

Here is an extract from a letter to Western Farm Life, written by the secretary-treasurer of a National Farm Loan Association: "The Federal farm loan act has sure put new life into the real estate business out here. I am holding several contracts made on the prospect of getting loans on land for the purpose of buying it. If we are successful in getting our loans thru, a great deal of the land now held by speculators will become the property of the farmers who are already here, and that alone will be a great benefit to our people. I am sure it will be better for the country when all this land becomes inhabited."

Here is an indication of what farm loans will do for the great areas of undeveloped plains country. The nonresident owner has been a drawback to that country, and if the lands go into the hands of actual farmers it means a tremendous addition to the cultivated area and a large increase in production.

And still some people, presumably good business men, are afraid that the farm loan law will "hurt the country!" Not long since a county agricultural agent in one of these intermountain states found himself facing opposition by bankers because he had advocated the organization of National Farm Loan Associations. These bankers declared that he was trying to hurt their business by introducing competition.

Bankers of that sort are a detriment to any community and the sooner they are hurt the better. Competition is what they need—competition that will reduce the interest rate on loans. That is usually the root of any opposition coming from bankers. Fortunately, such short-sighted financiers are the exception. Any banker who has given the farm loan law careful study recognizes that it means the introduction of outside capital into his community. He knows that when the farmer borrows money from the farm loan bank he must apply it to improvement of the farm. This necessitates the purchase of new implements; of lumber, fence posts, wire; of cream separators; of dairy or beef cattle, or a dozen and one other things necessary for improving the farm. The banker knows that these transactions are carried on thru the bank; that he gets the benefit in increased deposits, first, from the dealer with whom orders are placed; second, from the farmer whose increased business incident to larger capital gives him a chance to do some banking. No one will be injured if the farm loan law is wisely administered, and the banker is among those who will reap direct benefits.

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The Dry Farming Congress

The International Dry Farming Congress will hold its 1917 session at Peoria, Ill., the week beginning September 18th. This is announced in the February issue of the Agricultural Review, official organ of the Congress. The selection of Peoria is in line with the practice of the board of governors of locating the sessions of the Congress and the soil products exposition wherever financial support may be pledged to carry the organization through the current year.

Just what interest Peoria has in dry farming is difficult to understand. In fact, knowing that Peoria is the home of the largest distilleries in the country, it seems to us, facetiously speaking, about the last place that would be interested in dry gatherings of any kind. Or, is Peoria feeling the wave of prohibition reform?

We are informed by the Review that the location is "believed to be an ideal one for this year," and that while it is farther east than any previous location, it is nearer the center of dry farming activities than either the Lethbridge or the El Paso locations. We quote from the Review: "The Congress sessions at Peoria should do much toward acquainting the people of the central states with the objects and efforts of the organization and its accomplishments up to date."

True enough, if the object of the Congress is merely to give general publicity to the semi-arid west, but if we understand the matter correctly this is, or should be, an educational organization for the benefit of the dry land farmers. It certainly is too much to expect the farmers to visit Peoria when the sessions have not been attractive enough to bring them in large numbers either to Denver or El Paso.

If the organization is unable to maintain itself as an educational force in furtherance of scientific agriculture in the semi-arid regions, it might as well go into dissolution. Whatever might have been the underlying motives that resulted in the selection of Peoria as the next meeting place, it certainly is clear that the dry land farmer will not travel to Illinois to hear his problems discussed, nor is it likely that men from our western agricultural institutions, who heretofore have taken an interest in the Congress, will find it worth while to talk dry farming to the corn growers of Illinois.

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Our Cover Picture

This is the time of the year when farmers should begin to think about building that silo. Plan now, build during the summer and when fall comes you will be prepared. The silo shown on the cover page of this issue is located on the El Paso county farm, at Colorado Springs. The automobile of County Agriculturist W. H. Lauck is shown earning its keep by furnishing power to run the ensilage cutter. This method of power production is common among auto owning farmers who have silos. The man minus coat and vest standing beside the wagon is Mr. Lauck. Others in the group include members of the El Paso county board of commissioners and employes of the county farm.

Whitewash your poultry house. It improves appearances and acts as a disinfectant.

Comment by Farmer Putnam

INSPECTS BOWMAN'S DAIRY AT TRINIDAD AND DECIDES THAT THE HOT BISCUITS ARE FINE

Denver, Colo., March 10, 1917.

MILK is gittin' more important every day in those here dry times, so I guess you-all will be interested in my trip through Bowman's Sanitary Dairy down to Trinidad. I wasn't a-lookin' fur much in the way of a dairy down in the coal country, where they had that fracas with the miners a few years ago, but I was surprised to git into a place like Bowman's. It's a regular dairy, with a cowbarn that's a block long. Ninety cows is bein' milked just now with a Sharpless machine, usin' six units.

They has got part Jersey cows and part Holstein, and they mix the milk, 60 per cent Holstein and 40 per cent Jersey. The herd is averagin' four and a half per cent butter fat, which makes pretty rich milk. It is all bottled on the place and shipped out in boxes to the Harvey houses on the Santa Fe, to the coal camps at Sopris, Morley, Starkville, Piedmont and Wooten and down into the Pecos valley as far as Glorieta, New Mexico.

Mr. Bowman is a crank on keepin' records. He's got the milking record of his herd back fur fifteen years, never missin' a day in weighin' the feed and the milk, and knowin' right to a dot every time the cows eat whether they're payin' their board in milk and cream. One of the nice things about the place is the way it's lit up at night. Electric power is cheap in Trinidad and the dairy farm buys all it needs at 3 cents a kilowatt. (A kilowatt is a section of electric juice enough to kill a feller that monkeys with it.) The lights are strung through the barn, in the haymow, and all through the feedin' lots, so's the hull thing kin be lit up at night and any caff that's strayed away frum its corral kin be found. The juice runs the milkin' machines and the other apparatuses and the lights fur Mr. Bowman's house and fur the cottages of his workmen.

I never thought they was a hay loft as big as that I seen that day. It holds hundred and fifty tons of alfalfa and it was nearly half full of hay. I was lookin' at the chart and seen where the cows was gittin' about 400 pounds mixed ground feed, that is, alfalfa and grain. They ain't no silo on the place, but Mr. Bowman has been puttin' the manure out on his dry land and it will soon be ready to plow up. I'm predictin' that when he puts that ground in corn he'll have a stand that'll look like a Ioway corn farm.

He was showin' us his bull calves, which he fattens and sells fur veal. He sez it's a mistake to say you cain't veal a dairy caff profitably. He does it on skimmilk and the milk pays him 8 cents a gallon fur doin' it. He was feeding out ten head that I seen and they was bein' finished on a ration of ninety pounds of alfalfa leaves and stems, forty pounds of chop, ten pounds linseed meal and twenty-five pounds of bran and skimmilk. His caff feeder, Mr. Satanta, was givin' 'em all they could eat. He's a Mexican, but I'm callin' him Mister Satanta, and you would too if you knowed somethin' about him. He saved Mr. Bowman's life one time when a bull was just about gorin' him to death. He pulled the boss outen the pen just in time, and Mr. Bowman ain't a feller that'll furgit a thing like that. They ain't nothin' too good fur Satanta around that place. He understands calves and that's somethin' a feller's got to be born with. You cain't drill it into a man if it ain't in him.

After gittin' fat enough the calves is killed and hog dressed, the offal bein' fed to the hens. One butcher has a standin' order fur all the calves the dairy kin furnish him and he pays a good figger fur the veal.

Bowman's been twenty years a buildin' up that dairy and he ain't never sold a heifer offen the place, and he ain't got but one hoof now that wasn't born and raised right thar. He's a pretty shrewd business man, but I think it's Mrs. Bowman that's responsible fur his success. Any woman that kin bake such biscuits—well, I didn't intend to give much of the pussonel history of my trip, but now it's out, so I might as well tell the rest of it.

You see it was after the meetin' of the Farm Bureau in Trinidad and me and Director French and Mr. Kerr, the government market man; Mr. Lovett, the state leader of county agents, and Mr. Smith (Charles E.), the county agent, drove out to Bowman's in two autos. After makin' the rounds of the barn and the lots we nachully felt a little weak and Mrs. Bowman asked us if we didn't like to come in and take a little nourishment. Nobody was too polite to refuse, so we all followed Mr. Bowman in the house.

I smelled somethin' cookin' the minit I got near the kitchen and I sez to Smith: "By cracky, she's gittin' us some coffee."

"Yep," he sez. "I bet that ain't all neither. You ought to taste her biscuits."

Now, folks, I don't want to appear foolish, but if they is anythin' that's better'n hot soda biscuits, made with sourmilk, served with fresh butter, a little jell on the side, and all the drip coffee and all the rich milk you want to drink, what is it? Fur a long time us fellers just set thar swallerin' biscuits as fast as they was brought on. Smith kept a-lookin' over at me like it was about time fur me to ease up, and I felt as how it was, fur I didn't want to make him feel ashamed of his company. He was responsible fur bringin' us out. I didn't keep score, but I reckon Mrs. Bowman could tell a story of slaughter if she'd a-mind to. Once in a while Director French would fire a question at Mr. Bowman that kept him busy explainin' about the ranch, this bein' a tactical move so's they wouldn't be no interference while we was makin' away with the biscuits. I'm kind-a thrifty, which is a inheritance frum my revolutionary ancestry, the Putnam's, so I stowed away enough inside to save me buyin' supper and I was that much ahead on my expense account.

After the bombardment we went through the poultry department in compliment to our hostess, who runs that part of the ranch. We found out that she was takin' in about $1,500 a year from poultry products and I reckon it don't cost a great deal to feed the hens, with so much feed right handy at the dairy barn. It wouldn't if I was feedin' 'em.

One day a week before she picked up eighty-four eggs from the 120 layin' hens in one day, which ain't so bad when eggs is around 35 cents on the ranch. I seen her put eighteen in Mr. Bowman's hat right thar that evenin', and this was once where I lost out by lookin' too fat and sassy. Mr. Kerr that was with us just come outen the hospital in Washington and he still looked kind-a peeked, so Mrs. Bowman sez to him: "Do you eat eggs?"

"Yessem," he sez, "when I kin get 'em." Right thar he fixed hissel' fur a dozen fresh ones, and he brought 'em on up to Denver with him. I seen the county agent a-luggin' a little package back to the auto with him, too. Them county agent's is lucky fellers. They're just like the old-time preachers, allus a-gittin' good grub from the farmers. I guess Smith deserves it. His work has been successful. Since he's been in Las Animas county they has been a great increase in production, some farmers reportin' litters of twelve and thirteen pigs, others of twin calves; the prairie dogs has hiked down into the Raton mountains, the grasshoppers turned up their toes, the rainfall increased, the wind diminished. No wonder the farmer's feeds him on yellow-legged chicken and hands him packages of fresh eggs and butter when he comes fur a call!

THOMAS JEFFERSON PUTNAM.

Mare Hurt by Riding

Western Farm Life Service Bureau:

I have a 12-year-old mare, weight about 1200 pounds, that I have ridden occasionally the past seven years, always with the same saddle—a fairly good one. Last spring, after a short ride, she acted lame and stiff, but I did not attribute it to the saddling, and as she was better in a short time I rode her again. Though I only rode her about three miles she was so stiff before I got home she could hardly travel, and the top of her neck was badly swollen, beginning about five inches back of the ears and extending to the withers. That was three months ago, and the swelling is still there. Have not ridden her since, but have worked her in harness occasionally. She is in good flesh, and has good life. Seems to itch around neck and shoulders. I have used kerosene and lard, also lard and sulphur, and have scrubbed her thoroughly with a good stock dip, but without much result. The saddle has not injured the other horses.—W. H. L., Cheyenne Co., Colo.

The mare presumably developed inflammation of the skin on the withers and neck from irritation by the saddle. There may have been some infection involving the deep structures of these parts and a fistula of the withers might have been expected. Avoid further irritation from the collar or saddle, give laxative food and use sugar of lead solution locally, one dram to pint of water.—Dr. G. H. Glover, State Agricultural College.

Silo Means a Saving

Practical dairymen who are silo users say that the silo on the farm means a saving of from 8 to 10 cents a pound in the cost of producing butterfat. Beef feeders say that ensilage saves from $1 to $1.50 per hundred pounds in producing beef. Feeding experiments bear out these statements. On this basis ensilage under normal conditions is worth $4 per ton. With an increase of 50 per cent in feed prices it is worth $6 per ton. Reports from farmers over the state show an average cost of $2.75 a ton for corn ensilage, including all factors incident to its production. The inadvisability of doing without a silo seems to be more important than the question of whether to build one.

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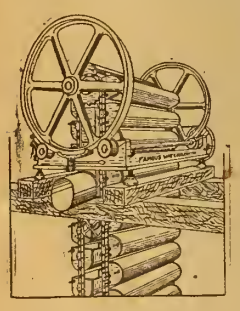

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Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and thru the magazine. Address all communications to SERVICE BUERAU, WESTERN FARM LIFE, Denver, Colorado.

Beans in Lister Rows

Have been told that Pinto beans can be listed. Would like to know if they will grow far enough above the furrow to be harvested with a bean harvester. Would want to cultivate with a two-row lister cultivator. The soil is a clay loam.—Jno. W. L., Hoyt, Colo.

You might plant pinto beans with a lister, but the practice is not advisable, as it increases the difficulties of harvesting very materially. The only case where listing is advisable at all is in those sections where there is very serious trouble with soil blowing.

The bean is a surface feeder and a shallow feeder. To bury a part of the bean stalk or vine in the listed furrow, which would necessarily be done in the cultivation of listed beans, means that the pods are more or less damaged by coming in contact with the soil if it is wet. The shattering danger is larger in harvesting, as is also the accumulation of dirt, which must be cleaned out of the beans in the cleaning process.—Alvin Kezer, Chief Agronomist, Colorado Experiment Station.

Note to Bean Growers

I would like to hear from any subscriber who has had experience in planting beans in listed rows. I would like to know if they can be harvested with a bean harvester if planted in the above way?—J. W. Lewis, Holt, Colo.

Planting Potatoes

Please give me the practical method of preparing seed potatoes for planting, the variety to plant and where to secure the seed.—B. F. B., Worland, Wyo.

The different varieties of early potatoes commonly planted in your section are Early Rose, Rose Seedling, Bliss Triumph and Irish Cobbler. In preparing the seed for planting, lay them out in the sun four or five days to green. Treat with corrosive sublimate, 4 oz. to 30 gallons of water. Dissolve in warm water first, then add the solution to cold water. Put seed in sack and immerse in solution. Leave the first lot in 1½ hours, second in 1¾ hours, third lot, 2 hours. Empty and make new solution. Cut seed in sizes of about 2 oz., not smaller, plant about 4 in. deep, about 3 feet apart and hills 17 in. apart. This will give you 9,800 hills and will require about 1,400 to 1,500 lbs. to an acre. In regard to seed write J. C. Milward, Secretary, Wisconsin Potato Growers' Ass'n. Madison, Wis. Also A. C. Tolass, Minnesota Potato Growers' Ass'n. St. Paul. Minn.

Piles in Pig

Could you give some information about a pig whose rectum sticks out about 1½ inches. I have tried putting it back in place, but as he strains against it, throws it out again. He has been fed milk and a little meal as a ration. Didn't seem to be very costive that I noticed. Has been in this condition four or five days now. Looks as if it might be the piles, if such a thing occurs in hogs.—R. S. F., Sligo, Colo.

Would suggest that you bathe the parts thoroly with warm water, then inject strong solution of alum water. Keep up this treatment until the pig is relieved and in the meantime cut down the feed and give something of a succulent nature that will keep its digestion in good condition. You doubtless have root crops that would materially help.

Waste Water

If an irrigation company in Idaho that has a large acreage segregated of government land lets a certain amount of water waste away from the end of one of their canals down on other government land and this water is filed on and proved up on, or a state water right obtained for it, is the irrigation company compelled by law to furnish this water after a state water right has been obtained for it by anyone?—R. W. M., Lafayette, Colo.

You may appropriate the waste water but have no right to insist that the water shall be continually wasted for your benefit. The owner of the water may take steps at any time to discontinue the waste, or use it in some other way, and you would have no right to complain.

Corning Beef

Will you please give recipe in your query department for corning beef to keep for summer use?—J. E. W., Routt Co., Colo.

Use the cheaper cuts of meat from the lower part of the body. Cut into convenient chunks of about equal thickness. Pack the meat first in salt, using eight pounds of salt for each 100 pounds of meat. After the meat has remained eight to twelve hours in the salt pack, add a brine composed of four pounds sugar, two ounces baking soda, four ounces saltpeter, dissolved in four gallons of water. This should be enough to cover the meat, but if not, add more water. Put a weight on the meat to keep it beneath the brine, as any exposed part will spoil. Keep the vessel in a cool place, and leave the meat in the brine until you are ready to use it. If the brine appears ropy or thick, pour it off, wash the meat and repack in new brine. The brine on corned beef must be watched closely as the slightest tainting of the brine results in soured meat, beef spoiling much more readily than pork.—G. E. Morton, Colo. Ag. College.

Cost of Growing Wheat

What does it cost to raise and market a bushel of wheat?—E. T. G., Kremmling, Colo.

Many factors must be taken into consideration and the cost would vary in different localities. If A had a very fertile piece of land, lived quite near the market, had modern implements and good motive power he could grow and market a bushel of wheat much cheaper than could B who lived quite a distance from market, had a poor piece of land, crude implements and insufficient motive power. The Kansas State Agricultural College has made an estimate of the cost of producing an acre of wheat, but even this is only approximate, since the cost of seed, twine, the conditions of the soil, the kind of implements, motive power and other features must all be taken into consideration and the results would naturally vary. Their estimate is as follows:

	Per Acre.
Plowing	$1.38
Harrowing	.33
Double disking	.73
Drilling	.37
Seed	.80
Twine	.25
Harvesting	.54
Shocking	.24
Stacking	.84
Threshing	.78
Hauling to market	.43
Interest in investment, 4% on $60	2.40
Taxes	.25
Total	$9.34

Bulls Running at Large

I would like to have the law on bulls running at large on the range.—C. C. B., Niwot, Colo.

Section 237, Colorado Statutes, reads in part as follows: "Any person allowing or permitting cows of which he is the owner, or agent of the owner, to run at large upon the public ranges of this state, shall provide and furnish at least one bull of not less than eighteen months of age for every twenty-five head of cows, or fraction thereof over ten head so permitted to run at large in this state; provided, however, that this provision shall not apply to any person owning or permitting to run at large less than twenty cows. The bull or bulls to be furnished under the preceding provisions hereof shall be at least one-half blood or high grade, and shall not include any Texan, Mexican or Cherokee bull, or other inferior bull of any breed whatsoever; nor shall any such owner or agent allow or permit any Jersey bull or bulls to run at large in this state under any pretense whatever."

Poisoning of Calf

We have a steer calf 9 months old, and in November, 1916, he began to get poor and weak, couldn't get up when down, but all the time had a good appetite, in fact, was right greedy, and seemed so thirsty, would drink three or four buckets of water daily. He is a bucket calf, but ran with the herd the latter part of the summer and fall. But when he began to get poor we kept him up and fed oats, hay, some alfalfa and some milk with calf meal and bran. Now he looks better and can get up alone, walks around and still has a good appetite, but his hind legs are stiff from knee down and the last few days the hide has cracked open above the first joint. Can you tell us what the trouble is and what to do for it?—M. A. C., Deer Trail, Colo.

This looks a little like ergot poisoning. The black kernels of ergot are sometimes found in the heads of blue stem, wild rye and other native grasses. This, if eaten in considerable quantities, will cause abortion and so constrict the blood vessels, especially in cold weather, as to cause sloughing of the tips of the ears, tail, and even the feet. Large cracks may form in the skin. A long-continued fever of some kind may have caused the cracking of the skin. Take extra care of calf and get some white lotion from your druggist to use on the cracked skin.—G. H. Glover, Colo. Ag. College.

Feeding Value of Squash and Pumpkin

Will you please give the comparative feeding value of squash and pumpkins to cows giving milk and also to horses as compared to bran or corn meal?—L. S. C., Greeley, Colo.

It has been shown by experiments that it requires about 2½ tons of pumpkin to equal one ton of corn silage for cows. As it usually takes about 6 tons of silage to equal a ton of corn meal or bran, it follows that pumpkins have about one-fifteenth the value of corn.

We have no information regarding the comparative value of pumpkins with squash, but presume that they are practically the same. There is, of course, some additional value in the pumpkins and squashes on account of the succulence which they provide for dairy cattle, and, as they will act to some extent as a laxative and as they will help to tone up the digestive system, they must be credited with some value aside from the net feeding value. They may also be used to advantage as a relish or appetizer for horses.

Pumpkin seeds act as a vermifuge—that is, will clean out the worms from the intestinal system.—Chas I. Bray, Colorado Agricultural College.

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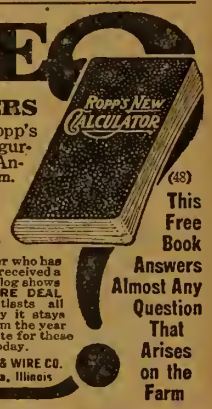

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Improved Powers Combined Well Boring and Drilling Machine

Same rig bores through any soil at rate of 100 ft. in 10 hours, and drills through rock. One team hauls and operates machine. Engine power if wanted. Easy to operate—no experts needed.

Small investment; easy terms. Make machine pay for itself in a few weeks work.

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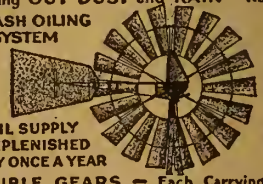

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Ride in a Bush Car. Pay for it out of your commissions on sales, my agents are making money. Shipments are prompt. Bush Cars guaranteed or money back.

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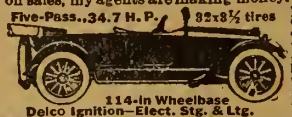

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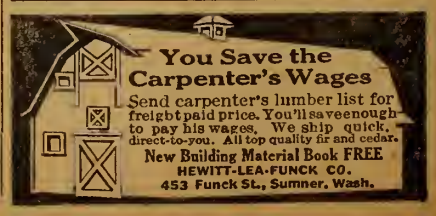

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LEGAL QUESTIONS

The following questions regarding legal matters have been answered by Peters & Barker, Attorneys, Equitable Building, Denver, Colo.

Can Fence Land

I have a quarter section of land. The public has been driving across it for some time. I want to fence it for convenience, but I am told the county has put a road on half section line. How can they do that without consulting me or buying said right of way? I do not particularly object to the right of way, but would like to have enough money out of it to fence the two sides of the road. Can I get any recompensation at all? If I can get damages how will I proceed?—E. S. R., Ordway, Colo.

You have a legal right to fence your land and to shut the public off from it if they have been crossing it, unless the public have crossed this land for sufficient length of time to create a right by adverse possession. Title by adverse possession can only be obtained by usage for a period of 20 years or more.

Under Chapter 123 of the Revised Statutes of Colorado of 1908, the county commissioners may establish a road when petitioned by a number of freeholders, not less than two-thirds owning land adjoining said road or part thereof to be vacated. The statute must be followed in establishing a road, and compensation and damages must be paid to the owner of land for any such land taken for road purposes. The value of the land taken is fixed and determined by viewers, but an appeal may be taken from the amount of compensation determined by the viewers, and can have this matter determined by jury.

Under the statutes you are entitled to notice of the proceedings taken. You had best apply to the county commissioners, who can give you all information with respect to this matter.

Waste Water

(1) Where one has seepage on his land and is compelled to drain it in order to farm same, can he drain it off his land into the highway? Or must he carry it across the road onto the land below? Who is responsible for the water after it is off your land? Can the land owner below you require you to drain through his land, or what are the consequences?

(2) When the line fence has been built between two farms and the man who built the fence sells his farm, does that give the purchaser the same ownership and jurisdiction over the fence?—L. C. M., Fort Morgan, Colo.

(1) You cannot drain your land off into the highway unless you provide means for carrying it to some natural drainage channel by ditch, culvert or otherwise. You would have no right to run your seepage water on the land of another without providing some carrying means so as not to damage the other's land, and if you did drain your seepage on to another's land without proper provision for taking care of the water you would be liable for the damages sustained by the other person.

(2) Yes.

May Remove Fence to Line

I have a half mile of fence on my land which is 30 feet from the township line. Can I remove half of it onto the line and make my neighbor build the other half? My neighbor says he is going to plow the land to the fence; the fence was put up six years ago to have a road there, but there isn't a road. Will I have to pay for my neighbor's fence that is on the land or can I have it removed?—N. N., Pueblo, Colo.

You have a right to remove any fence that is on your land to the line. You have the right to ask your neighbor to pay for half the expense, but care should be used that the fence is removed to the line. If the fence is not exactly on the line, then your neighbor would not have to contribute. You can notify your neighbor not to plant or crop this land. If he does so in spite of notice, then he does so at his own risk, but you cannot stand by and see him do it and then claim the crop.

Law Against Trespassing

Is there a law for the state of Colorado to protect a farmer against trespassing? Is taking down fence, going through crop or pasture with team, car or horseback hunting coyotes called trespassing? If so, what is the law?—G. F. K., Harrisburg, Colo.

Yes, there is such a law. In the taking down fences, going through crop or pasture, either on foot, by team or car or on horseback, is an act of trespass, unless the person doing such acts has the consent of the owner or the one in the possession of such land. A trespasser may be sued for damages, or he may be enjoined in a suit from committing further trespass. If the trespass is willful, the trespasser may be arrested for a misdemeanor.

Not Responsible

A boy that has been in the State Industrial school at Golden came to stay with us for his board and clothes and is going to school. We have not promised to keep him any length of time. If he gets into any mischief and does damage, will we be held responsible for the damage?—H. K., Longmont, Colo.

You will not be responsible for damages unless you contribute to the wrong or mischief which may be perpetrated by the boy. In other words, you could not stand by and consent to such mischief or damage without making yourselves responsible. We believe you are reasonably safe.

Notarial Commission

Will you please advise me who is the proper authority to apply to and how to proceed to become a notary public and what is the charge for same?—J. S. C., Las Animas, Colo.

You should apply to the Secretary of State at Denver for notarial commission. He will furnish you a form of petition and bond. Your notary commission when issued, should be recorded with the county clerk. The cost, including the seal, will be about $10 or $11.

Wages Are Outlawed

Will you kindly tell me if wages can be collected for work done in 1900, sixteen years ago last summer? If so, would one be entitled to interest?

Last winter I got permission to feed about forty head of cattle on a ranch which was in charge of a man living near. When I moved the cattle away in the spring it was impossible to clean up the shed and yards and, without giving me any notice, he hired the cleaning done, which he claims cost him $30. Then goes out on the range and drives in a heifer and holds it for the bill. Has he a right to do this? I am perfectly willing to pay what is right. What shall I do in the matter?—C. W. H., Grovont, Wyo.

Your claim for wages that were earned in 1900 is outlawed unless the party who owes you the money had admitted in writing his willingness to pay it since then. In answer to your second question, this party has no right whatever to hold your heifer. The only thing you can do is to bring a replevin suit for possession of your heifer if you cannot get possession of her peaceably.

Must Pay for Publication Not "Refused"

What is the law with regard to collection for subscriptions of periodicals? For instance: "A" subscribes and pays for a six months' trial subscription to a paper—at the end of the six months "A" does not notify this paper at all, either to continue or stop. Later "A" leaves home and no longer receives the paper, altho it may continue to come to his address there, received by some one else. He believes it has come regularly. Can the paper hold him for the subscription price during this period?—A. B. C., Wellington, Colo.

"A's" failure to notify the publisher to discontinue the paper makes him liable for payment of same for the period the paper was mailed in his name and was accepted at his address either by himself or some one else, even tho this period covered a term for which he did not order the paper. On this point, the United States Postal Guide reads as follows: "The Postoffice Department does not determine questions regarding the liability of subscribers for the subscription price of a publication. Publications which are not desired may be refused and not removed from the postoffice or they may be returned to the Postmaster endorsed "Refused."

Certain definite steps must be taken by the subscriber to stop a publication if he does not wish it continued after the term for which his paid subscription is run out. The safest way is to notify the publisher directly to stop the paper. Another way is to refuse the paper at the postoffice in the manner outlined above. Any reliable publisher will comply with a request to stop a paper, whether the order comes direct from the subscriber or thru the postoffice.

Can Hold Contracting Party

I own 160 acres of dry farm land in Logan county, Colo., which I leased to my neighbor for crop rent. Has he the right to sublease to another party and must I look to second party for my rent?—F. W. Papke, Calif.

This would depend entirely upon the terms of the written lease. Ordinarily a tenant has no right to sublet the property without the consent of the landlord in writing. The party who rented the land from you is not released by his subletting it to another without your consent.

Must Probate Estate

Last January my wife died at Burlington, Colo., leaving one child, a girl of 6 years. She owned a house and lot in Holden, Mo., in her own name. This property is not very valuable and does not more than pay expenses and is depreciating in value. I need the money out of it for the care and support and education of the child. What must I do to dispose of this property and how can the money be used?—E. H. T., Burlington, Colo.

You would probably not be able to sell your wife's real estate in Missouri without probating her estate there, so as to clear up the title to it. Under the laws of Missouri, when your wife died you became entitled to a curtesy interest, which is only a life interest in her property, but the legal title passed to her child. In order to sell it, you would have to take the matter up through attorneys and through court.

Big Crop of Alfalfa Seed

Alfalfa seed to the value of $6,000 and an additional thousand dollar's worth of hay is the record from a non-irrigated field of 200 acres on Dahehurst ranch is owned by E. A. Maxwell, Grover, Colo. Mr. Maxwell's statement regarding the crop is as follows: "I drill in the seed in May or June in rows 42 inches apart at the rate of eight ounces of seed per acre. This 200 acres was planted in the spring of 1915 and this year (1916), I cut and threshed $6,000 worth of seed; the hay after threshing being 100 tons, is worth about another $1,000. The season being so extremely hot and dry, and the alfalfa being young—only one year old—the crop was on an average only about one-fourth of its normal possibilities, it being capable of producing two tons of hay per acre, or more than $150 worth of seed per acre, or in round numbers about $30,000 worth of seed and hay on 200 acres."

The variety is the Grimm, which is especially adapted to dry farming conditions.

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The Federal Farm Loan System

Tells you how to go about it to get a loan under the Federal Farm Loan System; how Local Farm Loan Associations are formed; what interest is charged on loans; who can become members of Loan Associations; in fact it answers every question you could possibly ask about the new Farm Loan System.

This 240-page book is a Practical Manual for organizing and conducting Farm Loan Associations and shows you how to obtain the fullest benefit from the system. Tells you in plain language just what to do and how to do it. It gives the full text of the Federal Farm Loan Act and makes the Federal Farm Loan System as simple as "A B C" to understand. An attractive, cloth-bound library volume, printed in large type and easy to read.

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Answer the farmers' big questions, How can I grow crops with less expense? How can I save in planting potatoes? How make high priced seed go farthest? The

IRON AGE Potato Planter

solves the labor problem and makes the best use of high priced seed. Means $5 to $50 extra profit per acre. Every seed piece in its place and only one. Saves 1 to 2 bushels seed per acre. Uniform depth; even spacing. We make a full line of potato machinery. Send for booklet today.

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TRY BEFORE YOU BUY

Select the bicycle you prefer from the 44 styles colors and sizes in the famous "Ranger" line. We send it on approval and 30 DAYS TRIAL, *freight paid to your town.* Return it if not pleased and the trial costs you nothing.

Write at once for large illustrated catalog showing *complete line* of bicycles, tires and supplies, and particulars of *most marvelous offer* ever made on a bicycle. You will be astonished at our *low prices* and *remarkable terms.*

RIDER AGENTS Wanted—Boys, make money taking orders for Bicycles, *Tires* and Sundries from our big catalog. Do Business *direct* with the leading bicycle house in America. Do not buy until you *know* what we can do.

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They shear the grain instead of crushing it, requiring less power. The Letz is the feed mill that will grind all grain and forage crops fine as dust in one grinding—even corn with husk, alfalfa and oat hulls. Letz Kriss Kross Plate is known all over the country for fine fast grinding and long life. Ten days free trial. Write for free Feeding Book and Catalog.

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GROW BIGGER CROPS

Make use new of every available load of manure! Properly spread it means money added to your bank account next fall. Ask for 1917 free book today.

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Greatest forage crop and drought resistant. Produces fine crop of hay—superior to Millet and equal of Timothy. Barteldes' Sudan Grass Seed is a sure big yielder—from 2 to 4 tons of hay per acre and under irrigation as high as 10 tons per acre. BARTELDES' SUDAN SEED IS PURE—cleaned and recleaned. Scarce this year but we have a good stock. Order from headquarters. FREE Catalog of field and garden seeds—also special pink price list—send at once. 50 years of honest dealing.

THE BARTELDES SEED COMPANY,
732 Massachusetts St., Lawrence, Kansas.
732 Main Street, Oklahoma City, Okla.
732 Sixteenth Street, Denver, Colorado.

Data on Milking Machines

That milking by machinery, compared with hand milking, is less expensive, in general, in herds of more than 15 cows, and more so in smaller herds, is indicated in recent studies made by farm management specialists of the U. S. Department of Agriculture.

One of the important conditions affecting the economy of milking large herds with machines was found to be the elimination of unnecessary labor. Herds that normally required three men for milking by hand, only two of whom were needed to feed and care for the animals, required only two men to milk by machine. The available labor and the labor requirements are therefore better balanced in the latter case, since the same two men may milk and otherwise care for the herd, the labor of the third milker required under the hand system being dispensed with. This tendency toward economy when machines are used cannot result in actual economies in all cases when a small number of cows are milked, since depreciation, fuel consumption, repairs, interest on investment, etc., are responsible for considerable costs which must be charged to the milking expense.

The studies were made in typical intensive dairying regions in Delaware, Chenango and Chautauqua counties, New York, and among mixed dairying and farming enterprises in Lenawee County, Michigan, Fulton County, Ohio, and McHenry County, Illinois. It was found that in herds of 15 cows or less the average time required to milk a cow by hand was a fraction over 7 minutes, and by machine a fraction under 5 minutes. In herds of over 50 cows, however, the time required to milk by hand was a fraction under 7 minutes and by machine 4.15 minutes. In milking by hand, the average cost per cow in herds of 15 cows or less was $10.91 a year as against $10.45 in herds of 50 or more. When machines were used the cost was $11.77 a year in the smaller herds and $7.34 in herds of 50 or more.

The value of the labor replaced by the milking machines was found to vary from $2.63 per cow in herds of 15 cows or less to $8.33 per cow in herds of more than 50 cows. The addition to the time available for field work due to use of the machines was found to vary from 1.5 to 5.1 hours, according to the size of the herds.

Attention is called to the fact that milking machines must be operated by competent operators and that stripping by hand after the machine is essential if satisfactory results are to be obtained. The majority of the farmers visited during the studies believe that the milking machine has no effect one way or the other on the general welfare of the herd.

Studies of the comparative efficiency of various combinations of milking units and operators indicate that the greatest speed is made when one man operates and strips after two units, each of which milks two cows.

Warm Water for Cows

Dairy farmers often fail to supply their cows enough water during fall and winter months. This is especially true of cows giving large amounts of milk. The Missouri Experiment Station has found that two dairy cows used only one-fourth to one-fifth as much water when dry as when in milk. One cow giving over 100 pounds of milk daily used as high as 2,601 pounds of water daily. Cows in milk should not be forced to suffer exposure to obtain a drink of icy water, as they will not drink enough to produce the milk they are capable of yielding under more favorable circumstances. Cows may be induced to drink more water if it is warmed to about 60 degrees F. and if they have access to it at least twice a day.

A Lesson for Hog Raisers

It occurs to me that we hog men can draw a very valuable lesson from the International Stock Show at Chicago when we note the fact that the best steer was a California product that had never tasted corn. Men from the corn belt did not think such a degree of perfection was possible without corn, but our western cousins have "shown them."

I recently returned from a visit in the heart of the corn belt and noted the crude methods pursued, all the balancer of the corn ration their hogs got was the offal from the steers or a few stray wisps of only fair quality of timothy and clover hay. When I made some remarks about the unscientific methods, the answer I got was that they were not trying hard to make profit out of the hogs, but were getting out of a big job of corn hauling. I visited some bunches of hogs that received absolutely nothing but corn and water. The hogs are some heavier than mine; they would weigh around 200 while mine would only have weighed 160 to 175 at the same age, but I had frame to have carried 250 pounds as easily as theirs were carrying 200. In fact, many April and May pigs were not carrying their weight, but were down on their dew-claws and in some instances were crippled from their excessive flabby fat.

Well, they are saving the hauling of their corn, and if disease strikes their bunches it will save the hauling of hogs as well. Corn is a great feed, but those Californians have proven for us that there are others, and we who have butchered considerable pork know those soft, flabby hogs that are over-fat have little to their carcass but fat, and while lard is a good thing, an excess of it is soon reached. We are really producing a finer article of food and one that will eventually sell much higher.

With our rye, barley, peas, mill feed, inferior wheat supplemented with the smaller yielding hardier varieties of corn which we can grow, we don't produce the ultra-lard hog nor should we attempt it. Let us leave that for the fellow that wants to save hauling his corn. He is producing lard and but little else. We are probably producing as large quantities of lean meat in proportion to the feed given as they; in fact, I am of the opinion that we are growing our finished carcasses as cheaply as they, as we are compelled to study cost accounting or else quit.

I think now I could go back to Iowa, for instance, and raise hogs more cheaply than one man out of a hundred does because hogs would be the business with me instead of an incident to corn marketing, as it is to most of them. Let us just sit tight, hog production is increasing in the West and will still continue if we be content with a fair profit on our investment and pay for our labor.—E. W. Ferguson.

Horse Sale At the Jarosa Ranch

Continued from Page 8

they were getting special value and could afford to keep them until old enough for service, at prices ranging from $200 to $400.

The top sale was a handsome registered Belgian stallion from imported sire and dam, third in his class at the National Western Stock Show, a 3-year-old of perfect conformation, fine action and style, an individual that will make a winner in the shows. The bidding on this colt was very spirited and he was sold to Mr. Bragg of Wyoming for $2,000.

There were 34 registered animals sold at a total of $17,235, an average of $506.

After the sale of registered animals quite a number of grade mares were sold at prices which farmers could well afford, but which were below the actual value of the animals.

Guaranteed Capacity

WE build Sturges Cans to be more than just good milk containers. Each Sturges Can is built to be true to rated capacity. This is a big advantage in daily service. Saves work and time. forestalls disputes with city sealers—insures pleasing your trade more. Only highest grade steel plate is used. Carefully tinned, seams soldered smooth—easy to keep clean. Write for Catalog No. 32. Estd. 1865.

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Stackers and Sweep Rakes

Puts Your Load Anywhere.

MAKE YOUR HAY-STACKING EASY—with the Jayhawk Stacker. Time money and men saved. Lightest in weight—easiest to operate—delivers hay anywhere—no ropes or pulleys—cannot tip—fully guaranteed. Made of wood or steel. Sold direct at Manufacturers price.

WRITE QUICK FOR CATALOGUE AND PRICE LIST.

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MILLET COLORADO GROWN

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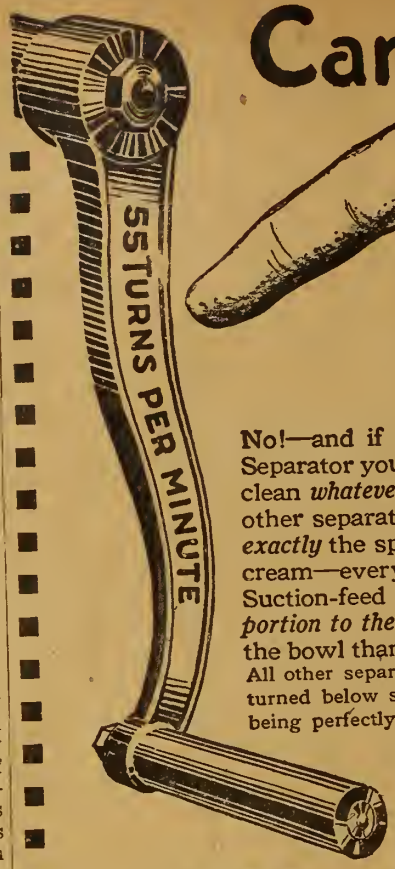

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No!—and if you have a Sharples Suction-feed Separator you don't have to, for it skims equally clean *whatever* speed you turn. But with every other separator you must turn the crank at just *exactly* the speed stamped on it, or you will lose cream—every time! The wonderful Sharples Suction-feed varies the milk feed *in direct proportion to the separating force—never* more milk in the bowl than it can *perfectly* separate.

All other separators have a fixed milk feed. Thus when turned below speed much of the milk runs out without being perfectly separated, and some gets into the cream, making it thin and uneven. Thousands of actual tests have proven that 19 out of 20 persons *do* turn too slow most of the time, and that *everybody* turns too slow some of the time. Get a

SHARPLES SUCTION-FEED CREAM SEPARATOR

—the *only* separator that skims clean at widely varying speeds
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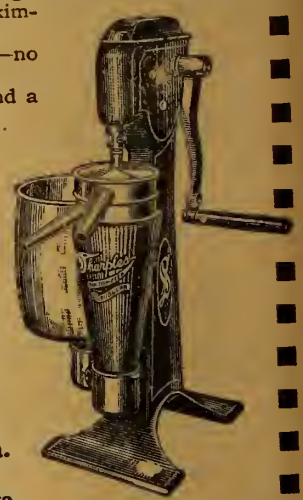
—the *only* separator with knee-low supply tank and a once-a-month oiling system



Sharples is positive insurance against carelessness and its consequent cream waste. We realized that it was far from sufficient that a separator *could* skim clean when properly handled. It was vitally necessary that it *would* skim clean—even when improperly handled. If any of the old-style fixed-feed separators would adopt a device for the purpose of notifying the operator when he is turning too slow, it would be an acknowledgement of the *vast superiority* of Sharples, which automatically *prevents* losses from irregular turning instead of simply announcing them. Write today for catalog to Dept. 30.

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Have taken the field by storm. The highest quality separator possible to build. Simple, scientific design, only two shafts in the whole gearing. Bowl easily washed. Working parts run in oil spray. Easy to operate. A perfect skimmer. You can

GET ALL DAIRY PROFITS

You can save even half because we build these perfect separators in our own factories with the highest skilled labor and lowest possible cost for fine materials and sell them direct from factory to farm at one small profit based on enormous volume. Guaranteed for ten years. Compare and test it beside ANY SEPARATOR BUILT. Ask for 1917 free catalog.

39.90 Skims 375 Lbs. Per Hour

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Box 1823 Waterloo, Iowa

"How To Feed Silage" FREE

Send for 36-page birds-eye on handling silage—a chapter from "Modern Silage Methods." 1917 edition of this book 25c. 264 pages. Answers all silage or silo questions. Ohio Silo Filler Catalog FREE.

The Silver Mfg. Co., Box 500 Salem, Ohio

Care of Milk Cows

In justice to the farmer, milk dealers should give considerable attention to the question of washing the cans before they are returned. If the cans are allowed to go back unwashed to the farmer, it is a very difficult task for him, with his limited facilities, to clean them.

In a circular letter recently sent to milk dealers by the Dairy Division of the department, it was pointed out that bacterial counts made from cans which had been washed and rinsed in the ordinary manner showed that there were from 300,000 to 18,000,000 bacteria in each can, with an average of 4,600,000. If 10 gallons of milk were put into one of these cans there would be added more than 100 bacteria to each cubic centimeter of the milk. That is to say , this is the least number that would be added. Whereas, it was pointed out, with a little steaming these same cans could have been rendered practically sterile.

One dealer who recently installed a modern washing machine employed a bacteriologist to test the results. It was found that less than 200,000 bacteria were in a can, and among them were no undesirable types. Bacterial counts of cans treated by a less efficient steaming device which this dealer had formerly employed ran as high as 20,000,000 bacteria to the can, including some undesirable kinds.

Care of the Dairy Calf

Large numbers of dairy calves are destroyed every year by bacterial infection shortly after birth. The most deadly of these diseases is white scours, or calf cholera, which generally proves fatal in a few days. Infection enters thru the navel cord. To guard against the disease, disinfect the stall where the calf is to be born, and bed with plenty of clean straw. Shortly after the calf is born, saturate the navel cord and the belly with some good disinfectant solution. Then tie the navel cord up against the belly with a band of clean cloth.

To prevent pneumonia, if the cow fails to lick the calf dry, rub it dry with a gunny sack and keep it out of draughts. See that the calf sucks the cow several times the first day.

Bitter Butter

What is the cause of butter being bitter and how may it be prevented?—G. K., Boulder Co., Colo.

Will say that the cause of bitter butter is holding the cream at too low a temperature at the time of ripening, or holding the cream too long. Undesirable bacteria work in cream held at the low temperature or held over a long period, and in this way cause the bitter butter. Milk coming from strippers or cows fed undesirable feed may sometimes cause bitter cream, and in this way cause the bitter butter, but it is more the exception than the rule. Bitter butter may be prevented by using fresh cream and ripening at a temperature between 60 and 70 degrees F. The use of starter will also aid very materially in securing better ripened cream.—G. E. Morton, Colo. State Dairy Commissioner.

Cow Is Out of Condition

What should be done for a cow when she loses her cud. I had one that seems to be sick. Please tell me what I can do for her.—A. H. M., Weld Co., Colo.

Competent veterinarians tell me there is no such thing as a cow losing her cud. The cow is out of condition physically. Give her a good physic of one or one and one-half quarts of raw linseed oil.

Stiffle Out of Place

I have young cow which became affected about a year ago as follows: Would drag left hind leg when starting out in the morning for some distance, and then would pop in stiffle joint, as the cord slipped off, and would walk all right for a few steps and then lock again. After exercising during the day she would seem all right. This fall the other leg became affected, and seems worse in cold weather. About ten days ago, I noticed she was swollen at base of jaw under throat, which seems very loose and baggy; also had small hard lump about two inches below left ear, which has now grown to the size of a turkey egg; is very hard, but not attached to bone, as I can move it with my fingers. Also small hard lump two inches up from upper cut of mouth on left side. I noticed, this morning, a lump coming on right side below ear. Cow is in good condition and eats well; seems playful after getting limbered up; has had good pasture all summer and is now getting good bright alfalfa hay entirely free from foxtail or other weeds.—W. D., La Plata Co., Colo.

The lameness is due to the stiffle coming out of place. It is hardly probable that anything could be done to give relief.

The lumps coming out on the head of your cow are doubtless caused from her having eaten foxtail at some time. Open each lump at the bottom so they will drain freely, and keep them syringed out clean.

Abortion

We have two fine cows that have dropped calves at 8 months and the last one at 7 months. Some time ago, I read in your paper where some man in Colorado had used carbolic acid in salt with success. I can't remember just how he said to use it, so I am asking you to please send me the directions again. Do you suppose the bull is at fault? We got him as a young calf and he is a fine appearing, full blood animal, but one of his testicles never came down until this winter. Could that cause a weakness such as to cause premature calves? I have quite a string of cows all to freshen in the next few months, and would like to stop this if possible. If you find it impossible to answer me personally, sign W. W., New Mexico, and I will get it. Tell Put to stay with W. F. L. He is a dandy and I usually read his comments first. —W. W., New Mexico.

I am not at all sure that this abortion is of a contagious character, but if you wish to feed carbolic acid in the salt to the other animals, I would advise that you dilute one ounce of carbolic acid with one quart of water and saturate 25 pounds of salt with this mixture, and when dry feed to your cows.

Hoofs Came Loose

We have some cows that are bothered with their hoofs coming loose, beginning at the heel and gradually coming loose around just in the edge of the hair. Can you tell me the trouble and remedy?—E. L., Ouray Co., Colo.

I judge the cause of this trouble is that they are kept in mud or water too constantly. They should be given a dry corral where the hoofs can be kept dry and free from mud.

Contagious Abortion

Please send me method of treating contagious abortion?—W. H. F., Brighton, Colo.

There has not yet either by individuals or the U. S. Government, been any method found for successfully treating contagious abortion. The Government recommends isolating affected animals from the rest of the herd, thoroly cleaning up and disinfecting the premises. I would suggest that you take this up with your county agriculturist. You cannot afford to allow this disease to spread, and the sooner you get it stopped the better.

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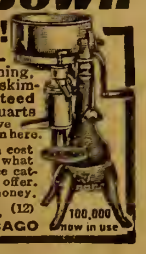

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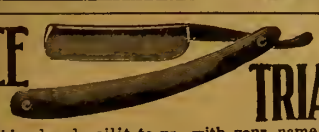

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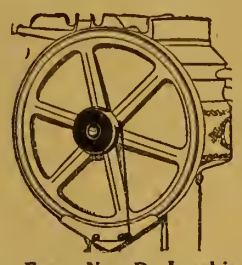
YOU can *see the difference* between a NEW DE LAVAL and any other cream separator right away.

And five minutes spent in comparing the bowl construction, the size, material and finish of all the working parts, the manner of oiling, the tinware and the frames, will surely convince you of the superiority of De Laval construction and workmanship.

Then if you go a step farther and turn the cranks of the two machines side by side for fifteen minutes, running milk or water through the bowl, you will see still more difference.



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Speed Indicators can be furnished for use on old style De Laval machines at a cost of $3.00 each.

And if you will run the two machines side by side in practical use, as any De Laval agent will be glad to have you do—the De Laval one day and the other machine the next—for a couple of weeks, you will see still greater difference in the work of the two machines.

There is a De Laval agent near you who will be glad to explain all the improvements and advantages of the NEW De Laval, and who will set and start a machine for you on your farm and let you *prove the difference* for yourself.

Why not see the nearest De Laval agent at once? If you do not know him, write to the nearest office for any desired information.

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FREE TRIAL OFFER A AND C CALF MEAL

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Books For the Farmer

Answering an inquiry from a subscriber for a list of books on livestock and dry farming, Prof. Alvin Kezer of Colorado Agricultural college, submits the following:

He recommends that anyone taking up dry farming get familiar with Widtsoe's book, "Dry Farming," as well as Parson's. He should get in touch also with the available state and United States bulletins. The following books will probably be helpful along animal husbandry lines:

"Feeds and Feeding," Henry and Morrison. (This book has no equal.)
"Milk Production," Eckles.
"Breeds of Livestock," Plumb.
"Breeds of Livestock," Sanders.
"Productive Horse Husbandry," a Lippincott publication.
"Swine Husbandry," Coburn.
"Sheep Feeding and Management," Shaw.

To Prof. Kezer's list we would add, for those who are beginners at farming, "Essentials of Agriculture," by Henry Jackson Waters. While this is intended principally as a text-book for use in agricultural high schools, the volume is of such a practical character that it should find a place in every farm library.

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The Farm Home

MRS. H. T. FRENCH

Questions about home problems promptly answered by letter and thru the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

SPRINGTIME.

(Elizabeth Howe Fiske.)
From a snowbank prison
Little voices call;
March comes to their rescue,
He has heard them all.

With a key of sunbeams
From a golden ring,
He sets free the crocus
And lets forth the spring.

Home Demonstration Work

Are we sufficiently awake to the advantages of this great aid in the development of the home life in the country? Much progress in organization and plans for work along home economic lines is daily brought to the attention of this department. Requests for aid in community organization and in the planning of effective programs are on file in the editor's desk. Surely the harvest is near at hand and those who can answer the call for help are as yet too few. Miss Miriam Haynes, the home economics demonstrator of Colorado, with her untiring zeal, is reaching many of our homes, and thru personal contact and efficient direction is helping all with whom she labors, to a better understanding of the Home Demonstration Work, made possible by the Smith-Lever Act which went into effect in 1914, the first law enacted which specifically mentions home economics as a phase of agricultural extension work, and carries with it an increasing amount of funds which may be expended to aid in solving the problems and of making better and happier home life in the country. The editor of this department would like to have the home-makers feel very free to make suggestions and ask for aid thru these columns.

Miss Florence Ward, who from the Federal Department of Agriculture cooperating with the state colleges of agriculture, has charge of the Home Demonstration work in the small districts of thirty-three northern and western states, says: "The Smith-Lever Act gives substantial countenance to the fact that home management on the farm requires as high a degree of skill and as wide a range of information as that required for farm management itself."

Miss Ward further says, "We sometimes speak of a man who failed in business. A woman fails quite as often in housekeeping, and the time is coming when the housekeeper will be held as definitely responsible for her work as the business man for his. She will keep a budget of accounts. She will understand the markets, and how to buy clothing and food stuffs. Upon a wife's efficiency in spending depends much of the success or failure of the farmer.

"The average farm woman's working day covers a period of ten hours. If she is to gain satisfaction in life she must do so while carrying on her regular housekeeping activities. To help her to attain this end the home demonstrators, who will work with her thru this office, must be practical business women, who will bring to her, not visionary notions and fads couched in scientific laboratory terms, but things the woman can apply today."

Now will not you who read do all you can to assist in the organization of this work? Let our aim be so broad that every woman shall be better able to cope not only with such branches of home economics as sewing and cooking, but also the ever-present problems of successful sanitation, marketing, social life and happy living.

Hints for Clubs

Too many clubs, both in city and country districts, are good, but good for nothing special except "tat and talk." They drift along. How can we best introduce some really worth while, practical and enjoyable work for groups of women? Very often when a club or organization is approached in the country districts they say, "Give us something concerning things away from us." In asking for information about everything but what relates to their real, everyday life, they make a big mistake. They should want helpful suggestions concerning their everyday problems. I have often heard club women say," We do not want to hear about dish-washing and baking potatoes; we get too much home-making at home." Do they? I am inclined to think they have too much housekeeping with its drudgery, and too little real home-making, and there is a difference.

Home-making is the biggest individual profession we have, therefore a woman must have a respect for her job. It is up to her to take a keen, live interest in any and all phases of home work and to plan to standardize home conditions, putting her work on a systematic business basis.

Many clubs or groups of women over the state have taken up definite study concerning "Home Improvement." They find it interesting and worth while to get together in a social way and exchange ideas. If a program committee for any club wishes suggestions for topics for study, please write the Home Economics Department, Extension Service, State Agricultural College, Fort Collins, Colo.

M. M. H.

In Season.

During the winter months while keeping snug and warm by our firesides, learning many lessons concerning the heating of our homes and the proper ventilation of the same, the writer hopes the joy and profit that comes from getting together and discussing community life both for advanced business, social and recreational interests has not been lost to view.

We hope libraries have found appreciative readers in many more communities, also that extension schools have been encouraged and supported.

And now that fathers and mothers and children have enjoyed this season of visiting around the evening lamp, making plans for better co-operation in school and home, in club and community in general we cheerfully and with renewed energy welcome the spring months and are eager to turn our energies into new channels. The following is the outline of work as Miss Ward has suggested:

March, April and May.

Poultry: Incubation, brooding and care of chicks; poultry management as an adjunct to the farm business, and how poultry may best serve as a source of income for farm women.

Gardening: Planning the garden; the choice of varieties of vegetables and small fruits; planting and culture of the season; instruction and demonstration on how the garden may be made to contribute to the food supply of the family for the entire year and how the surplus products may be marketed to advantage.

The Home Grounds: The care of lawns, walks and driveways; the planting of flowers and shrubs to secure the best effect; growth of roses and vines and their use for decorative purposes.

Home Sanitation: The protection of the water supply; the location of outhouses; the prevention of flies and mosquitoes.

Miss Ward, in submitting this outline, says this is not a complete outline of the projects but enough to give some idea of the scope of the work, and then asks, "Now, how will these projects pan out?"

Women, is it not up to us to demonstrate what may result from some well planned and well directed effort? Let us hear from you.

Thrift

How encouraging are the signs of the present day display of our boys and girls, expressed by a growing desire on their part to earn and save money. One author has said that children desire money not only for immediate spending but that they may plan for higher ends expressed in the following motto:

I want the Money
To Get the Time
To Get the Things
That Money Can't Buy.

May we not give attention in these columns to this timely question by aiding in plans of home work and money making for our country boys and girls **right at home?** Let us have some detailed but concise plans from a few of our ambitious and generous-minded young people who have **tried, succeeded** and want to **pass it along.**

A Few Examples of Thrift

(From periodical of American Association of Achievement, mentioning a few of many to whom recognitions were awarded.)

Girl, age 14 years: Secured vacant lot next door to home, raised and sold asters and sweet peas amounting to $42.75; saved $29, placing it in savings bank in her own name. Elements recognized: Industry, thrift.

Boy, age 14 years: Rented acre, bought seed corn, tested same; planted it, and made net profit of $52. Bought violin and is now paying remainder for music lessons. Elements recognized: Industry, thrift.

Girl, age 15 years: Received one first and two second premiums for best exhibit of canned surplus products raised in own garden and by her during vacation. Element recognized: Industry.

Boy, age 14 years: With money he had saved bought second-hand lumber, built pigeon house eight by ten feet; during season sold squabs to the value of $23.90, besides supplying for home use. Elements recognized: Initiative, industry.

The City of Not at All

"Tomorrow I'll do it," says Bennie;
"I will, by-and-by," says Seth;
"Not now, pretty soon," says Jennie;
"in a minute," says little Beth.
O, dear little people, remember
That true as the stars in the sky,
The little streets of Tomorrow,
Pretty Soon, By-and-By,
Lead one and all,
As straight, they say,
As the king's highway.
To the city of Not at All.

How to Make a Hotbed

Hotbeds may be constructed in a number of ways. One of the most common and serviceable is the pit

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Do it by planting a rose bush this year, sure. Every home should have one or more rose bushes—the greatest flower of them all. One of the most beautiful roses we know anything about is the Gruss an Teplitz (Virginia R. Cox) Rose. Very hardy flower. Grows freely in all sections to a height of 4 to 5 feet. Produces a mass of gorgeous bloom on long stems. A vivid, dazzling, fiery crimson; sweetly fragrant. To introduce this new, beautiful rose to you we make this special penny offer. Send us an order for one at our regular price of 15c and add 1 penny more or 16c in all, and we'll send 2 plants. Or, if you prefer, we'll send 1 crimson rambler at regular 15c price and this new rose for 1c extra. This offer is so liberal we confine it to 1 order and to 1 member of a family.

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Just your name on a postal brings it to you free, postpaid. It's chuck full of Flower, Garden and Field Seed bargains. It tells best time and how to plant. Best soils for growing. Best seeds for different sections, etc. It tells all about Lincoln Brand Seeds, the new trade name for the well-known Griswold Quality Seeds. A seed book worth having. Send for your copy today sure. It's absolutely free. Address

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method. The hotbed should be placed on the south side of a building or other good windbreak. Care should be taken that it has good drainage. Three feet by six feet is a convenient size for a sash and as many of them may be used as desired. The frame should be twelve to fifteen inches high at the back and eight or ten inches in front. The sash may be of glass, but many persons prefer muslin.

The heat for hotbeds is commonly supplied by the fermentation of horse manure. That from highly fed horses is desirable. Straw to the amount of from one-third to one-half of the manure should be added, as the manure will not heat if it is too solid. It should be piled in a long, narrow, square-topped pile, and if very dry should be moistened.

If the weather is cold and the manure does not ferment readily, add a little hen manure or warm water to one part of the pile. In order to insure uniform fermentation the pile should be turned occasionally and all lumps broken. When the pile is steaming throughout, which is usually in from ten to twelve days, it is ready for use.

Dig a pit two to three feet deep, depending on the time of year the bed is to be used, and the same size as the bed desired. For common use, such as growing early tomatoes, radishes and lettuce, early in March is the time to start the hotbed. Hotbeds prepared after the first week in March should have an eighteen-inch pit. Upon the bottom of the pit place a layer of straw or leaves two or three inches deep. Next place a layer of the fermented manure eighteen to twenty inches thick. Above this put a layer of loam soil four to eight inches deep in which the plants are to be grown.—M. F. Ahearn, Kansas Agricultural College.

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We can supply our readers with high-grade perfect-fitting, seam-allowing patterns at 10c each, postpaid. Full directions for making, as well as the amount of material required, accompany each pattern. When ordering, write your name and address plainly, tell us the correct number and size of each pattern you want. We agree to fill all orders promptly and guarantee safe delivery. Address all orders to WESTERN FARM LIFE, Pattern Department, 14th and Arapahoe, Denver, Colo.

1969—Charming Dress for Mother's Girl. Cut in sizes 6, 8, 10 and 12 years. Requires 3 yards 44-inch material for 8-year size. Galatea, gingham, serge, linen or percale, may be used for this model. It is also good for velvet, corduroy, taffeta, mixed suitings, cashmere or gabardine. The fronts and back are cut long in panel effect, and the waist sections are lengthened by plaited portions, that may be trimmed with the pointed tabs. If preferred, a belt may be used as shown in the small view.

1974—Child's Outdoor Set, consisting of Leggings and Coat. Cut in sizes 2, 3, 4 and 5 years. Requires 3¼ yards 44-inch material for 4-year size. This model is good for zibeline, serge, cheviot, corduroy and velvet. It makes a nice, warm and comfortable suit for sport and outdoor wear. The leggings extend to the waistline.

1967—New and Comfortable Undergarment. Cut in sizes 34, 36, 38, 40, 42 and 44 inches bust measure. Requires 3 yards 36-inch material for medium size. This model combines several practical points, and insures comfort and ease. The drawers are cut with yoke and flounce sections. The corset cover has full body portions joined by shoulder straps, which may be replaced by ribbon. Lawn, nainsook, batiste, crepe, dimity or silk are suitable materials with lace or embroidery for trimming.

1954—Popular Style, Ladies' One Piece Dress. Cut in sizes 34, 36, 38, 40, 42 and 44 inches bust measure. Requires 7½ yards 36-inch material for 36-inch size. Serge, gabardine, satin, velvet and taffeta are good for this. The model has simple lines and is easy to develop. The belt is finished with a smart pocket, which may be omitted. The sleeve is in bishop style and has a deep cuff.

Catalog Notice

Send 10c in silver or stamps for our up-to-date SPRING AND SUMMER 1917 CATALOG, containing 550 designs of ladies' misses' and children's patterns, a CONCISE AND COMPREHENSIVE ARTICLE IN DRESSMAKING, ALSO SOME POINTS FOR THE NEEDLE (illustrating 31 of the various, simple stitches), all valuable hints to the home dressmaker.

WESTERN FARM LIFE SEWING MACHINE

Costs less than half the price of other machines. Sold on a money-back guarantee basis. We pay the freight and allow 90 days' trial. Send for FREE machine book; describes our machine in detail and explains why you had just as well save from $30 to $35 when securing a good machine. WESTERN FARM LIFE, Denver, Colo.

Cheaper Cuts of Meat

The cheaper the cuts of meat such as flank steak, rump, and chuck roasts, heart, liver, and chuck steak, contain the same amount of nutriment as the more expensive cuts but are not so tender. In order to make them palatable they should be cooked slowly at a low temperature; stewing is preferable. Seasoning with highly flavored vegetables and spices improves the flavor.

In choosing meat for a stew, choose that containing bone, as this improves the flavor. If the stew is to be the main part of the meal, it can be made more nourishing by the addition of rice, barley, or any other cereal.

One of the cheapest methods of food preservation is drying, and for this reason dried fruits are more economical to buy for winter use than are canned or fresh fruits.

Many persons do not know that the moisture which has been removed from apricots, peaches, prunes and other fruits in the drying process should be restored by allowing the fruit to soak overnight before it is cooked. The fruit should then be cooked in the same water in which it was soaked. This insures retaining all of the flavoring materials.—Lenora Richards, Kansas State Agricultural College.

DELCO-LIGHT

For the first time electric light and power are available to anyone—anywhere.

Heretofore, the benefits of electricity have been confined to those who live in the larger towns and cities.

Now Delco-Light makes electric current universally available.

Delco-Light is today furnishing thousands of farm-houses with brilliant, convenient, safe and economical light.

It is furnishing power to operate pumps, washing machines, churns, cream separators, milking machines, vacuum cleaners, etc.

It is lighting country churches, stores and public halls.

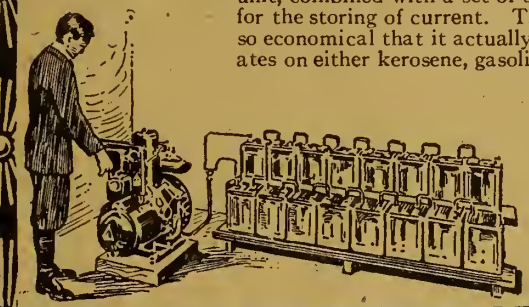
It is furnishing light and power to summer homes and camps, to houseboats and yachts, etc.

It is lighting rural railway stations and construction camps.

It is lighting the camps of United States troops on the Mexican border, and it is disclosing heretofore undreamed-of beauties in the depths of Mammoth Cave, Kentucky.

Altogether, over 15,000 Delco-Light plants are in operation, and Delco-Light offices and service stations are to be found in almost every part of the world.

Delco-Light is a complete electric plant—the engine and dynamo in one compact unit, combined with a set of specially built and wonderfully efficient batteries for the storing of current. The plant is so simple a child can care for it, and so economical that it actually pays for itself in time and labor saved. It operates on either kerosene, gasoline or natural gas.



Be sure to write for the illustrated booklet

The Domestic Engineering Company
Dayton, Ohio
Offices in all principal cities

Barnett Ranch Lighting & Appliance Co.
1525 Sixteenth St., Denver, Colo.

What One Farm Bureau Did

Continued from Page 5

recommend the parties who wish to buy stock.

The Chamber of Commerce of Trinidad furnishes the fund which is to finance the purchase of cows, this fund being used only for that purpose and not for lending to individuals. Farmers who can secure proper recommendations thru their local clubs are to make private arrangements with their local bank for a loan, in case they cannot purchase cows outright. Thru this arrangement all farmers participating will be able to get high grade dairy stock at cariot prices, either for cash or on credit extended by the local bank serving the district in which the purchaser lives.

Briefly, the terms under which loans are to be made by the banks are as follows: The purchaser of cows will place his account with the bank that is to make him a loan, the object of that provision being to get the transfer from "back east" of accounts of the new settlers.

An agreement is then made between the banker and the farmer for the turning in to the bank of all cream checks, a portion of which are to be credited each week or month, as the case may be, to the sinking fund that is to provide for redemption of the note, the balance to be credited to the farmer's checking account. This gives the bank the farmer's business and the worthy farmer the necessary credit.

Before making such arrangement with the bank the prospective purchaser must have been able to show the local livestock committee that he has water, feed and shelter in sight to properly carry on the business of dairy farming.

The banks making the loans are assured of proper supervision and advice for the farmer from the county agriculturist and the local livestock committees, who will see that payments are kept up and who will seek to recommend for loans only such settlers as show themselves worthy of credit and qualified to carry on farming successfully.

The purchasing fund will be used over and over until the demand for cows is supplied and then will be returned to the chamber of commerce with interest.

No mention is made in the formal plan as to what interest is to be charged by the country bankers, but the men behind the movement will protect the borrower against any attempts to make the rate excessive.

Communities interested in the plan may obtain copies of the outline on application to Secretary Chapman of the Trinidad Chamber of Commerce, or to County Agriculturist C. E. Smith, at the same address.

Profitable Farm Poultry

W. E. VAPLON

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries Poultry Department, Western Farm Life, Denver, Colorado.

HATCH NOW: The day of grace is rapidly passing; the harvest is ready, the fields are white, and we wonder if the harvesters are not few.

Repetition becomes tedious, to say the least, but we feel free to pardon ourselves in this case, because of the extreme importance of the subject. Eggs are bound to be high next winter, and we want our service bureau to be responsible for our readers to get more of them. What we mean by our first words is that the "profitable" hatching season is rapidly passing, so rapidly that we will not realize the fact, and soon it will be too late to hatch our pullets for early business and the high prices will escape us again as they did last winter.

Do not deceive yourself into believing that "feeding" brings the winter eggs. While there will be no winter eggs without good feeding, the most scientific feeding of molting hens and immature pullets will prove a losing game.

Chick Preparedness

We will soon be worrying about "chick diseases." Put in a little of that worrying time into preparedness and prevention. Remember the two great enemies are chilling and lice, and if these can be avoided the chicks have better than an even chance to pull thru.

The Indiana Agricultural College has recently published a bulletin in which the statement is made that the average mortality of chicks during four years was 17 per cent. Undoubtedly the average mortality of chicks on the farm is more and often much more than this, but it need not be. It is entirely possible to raise chicks without much equipment, but it does not pay to attempt to do so. An abundance of heat, especially for the early hatched chicks, is absolutely necessary; cleanliness is the next essential factor, and a variety of feed next in importance. Sour milk, both a food and a tonic, is the best preventive, next to heat, of chick disorders. The following summary, taken from the bulletin mentioned above, is of extreme interest, and our poultry farmers would do well to keep records to know as clearly what the business is doing for them:

"1. Based on four seasons' work and several thousand chicks hatched, it required 1.83 eggs set for every Leghorn chick hatched.

"2. The cost of hatching these eggs was $.021 per chick, which, when added to the cost of eggs, increased the total cost of a chick when hatched to $.057.

"3. Based on the first twelve weeks of life, it took 5.69 pounds of grain and mash and 5.07 pounds of milk, costing $.1434, to feed a Leghorn chick.

4. During the same time it took 3.59 pounds of grain and mash and 3.41 pounds of milk, costing $.084, to produce one pound of gain.

"5. When figuring cost of feed, fuel, labor and litter, the whole cost of one pound of gain was $.154.

"6. The average Leghorn pullet twenty-four weeks old and ready to lay, weighed 2.75 pounds.

"7. The feed was by far the most expensive item in the cost of rearing chicks.

"8. On the basis of 100 chicks hatched and a 17 per cent mortality, the per cent pullets and the per cent cockerels were 40.1 and 42.9 respectively.

"9. The time of hatching greatly influenced the rate of growth of chicks, price of broilers, net cost of growing, and weight of pullets at laying age. Early hatching paid best.

"10. Early cockerels were sold at a profit. May-hatched broilers sold at a loss.

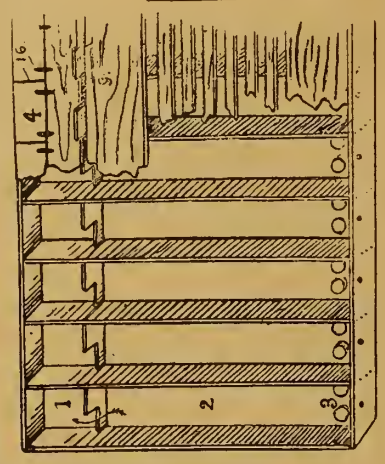
"11. The gros saverage cost of a pullet was $.434. This, less profits in cockerels, made the net cost $.381.

"12. Mortality varied and influenced the final cost. The average mortality of 999 chicks was 17 per cent.

"13. For every pullet reared it required the settlng of 4.57 eggs.

"14. Cockerels grew more rapidly than pullets."

Item No. 9 is of especial value and is a fact that every business poultryman has demonstrated; still the general rule, largely due to circumstances, is to hatch the bulk of the chick crop late, too late to take advantage of the high price broiler market, and too late to produce early winter laying pullets.



Natural Hen Incubator

Ten years ago, when home-made incubators were much in evidence, we sent fifty cents in answer to an "ad" for plans of the "Natural Hen Incubator." The accompanying sketch gives a good idea of this incubator. (1) Shows the nest in the end of the narrow run; (2) the run, each pen is made of a nest and a small run or yard; (3) water and feed dishes; (4) the cover of the nest. Inch boards are set on edge, parallel and about 14 inches apart, with a board of same width across the ends; at one end the nest is placed, a cover made to lift is made over the nest, the runways being covered with poultry netting or lath; this gives each hen her own nest and yard. The ground where the Natural Hen incubator is to be placed should be plowed or spaded up so that the hen has a good clean bathing place. Hens placed in such an arrangement require little more care than to be supplied with plenty of grain and fresh water.

Roosting Quarters for Hens

I would like to ask you for any suggestions you might be able to give me in regard to the construction of a poultry house suitable for housing about 150 laying hens. By this I mean to infer just the roosting quarters as the hens are to have free range in pleasant weather and a scratching shed during stormy periods. I would be pleased to receive any available literature on the subject if you have any, or information where I could get it.—M. A. B., Pueblo, Colo.

Under separate cover, we are sending you Bulletin No. 213, also an outline of a poultry house built for the accommodation of from one hundred to one hundred and fifty hens. The house here described is suitable not only for roosting, but for exercising when hens are confined. The size of the roosting room, if you intend to have a separate scratching shed, cannot be guaged by square or cubic feet, so much as by the conditions furnished. To me it is much the same matter as planning for a sleeping room for a certain number of people. The matter of ventilation and comfort is the one to be considered. I should consider a room 14x20 feet large enough for roosting quarters for the number of fowls you mentioned, one hundred and fifty, providing the ventilation could be furnished so that the room would not be close and stuffy and foul. This would largely be a question of sanitation. Where both the roosting room and scratching shed are built in one, as in the plan that we are sending, about three square feet to four square feet of floor space should be provided for each fowl. This plan is usually adopted as we find that the roof is the costly part of the structure and when the droppings can be swept from the floor and the entire floor space be given over for the use of the fowl, the extra scratching shed is not needed.

Hens Go Blind

Why do my hens go blind? They seem healthy. Run loose on the farm. The pupil begins to grow smaller and smaller until it is a mere speck, and they die of starvation. Last summer we had some hens to "have fits." They would kink their neck around and turn their heads wrong side up and it seemed to hurt them if I held their head right. They looked healthy, with red combs, but finally starved. Some little chicks developed the same ailment.—E. L. R., Washington Co., Colo.

We cannot definitely answer your first question, never having had similar cases or never having had the privilege of examining such cases. If the trouble is general and a number of your fowls are affected, please write the Veterinary Department of the State Agricultural College, Fort Collins, asking how to ship a specimen for examination. They may be able to diagnose the case and give you a reason for the trouble.

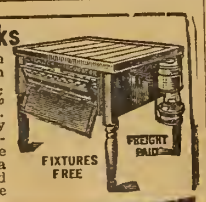
The second case you mentioned may be limber-neck, but this also cannot be determined without an examination. Limber-neck is a condition which comes from eating rotten or putrid meats, causing the muscles of the neck to become limber. A remedy advocated by B. F. Kaupp is a tablespoon full of castor oil for an adult bird and 1-5 to 1-4 grain of sulphated strychnine three times a day. If rotten meat or other meat is not the cause of this condition in your fowls, write the Veterinary Deparment, as advised in the case of the other trouble.

Concrete Poultry House

I am intending in the near future to build a poultry house so I am writing to get your opinion of same. The place where I intend to build is on a steep side hill facing south. I thot of digging into the bank about the width of the house, then building solid concrete walls and floor with the exception of a place in the center for a scratch room. Would the solid concrete walls make it too damp? And what would be the best kind of roof? I have a few old hens that just get lame and limp around for two or three weeks and then die. They are fat and seemingly healthy. Can you tell me what is the matter?—D. B. Allison, Byers, Colo.

I am not able to advise you regarding the imperviousness of concrete walls built as you intend making for your poultry house. With good drainage on the north and a painting of cement on the inside of the wall, I do not think you would have any trouble with dampness. I believe your plan of building will give a splendid house both for winter and summer. From your description of the trouble you are having with your hens, it is impossible to define the trouble. Please write to the Veterinary Department of the Agricultural College, stating your trouble and asking their advice as to sending one of the cases to them for diagnosis. If they are in a position to do so, I am sure they would be glad to have it. Chances are that the trouble comes from over-feeding and lack of exercise, but this could only be determined by an examination.

Strong Sturdy Chicks step lively from the Sure Hatch Incubators. Sure Hatch Chicks grow into money. Many users make 100% profit each year. You can too. Machine is simply and easily operated. The wife or children can run it. Takes little time and attention. Only a small space. Read the record of 19 years success with the



SURE HATCH

Fascinating Free Catalog pictures and describes fully the Sure Hatch Incubators and Brooders. Read what our users say of their success. See their chickens. Hear of their profits. Just send your name and address on a postal and this Big Book comes free. No trouble or expense.
SURE HATCH Box 51 Fremont, Nebraska

The Farmers Life Insurance Company
Home Office, 340 Gas & Electric Building,
DENVER, COLORADO

Admitted assets.....$ 2,288,644.00
Insurance in force..... 16,689,093.00
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DO BUSINESS WITH A HOME CONCERN AND KEEP YOUR MONEY IN THE WEST

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EGGS :: EGGS CHICKS :: CHICKS

Do You Want Eggs and Big Profits This Winter?

Then get eggs for hatching or day-old chicks of the famous TOM BARRON stock—282-egg blood. Why not come to headquarters for bred-to-lay Leghorns? They will cost you no more. Our birds are range-raised, strong, vigorous, healthy. Sure winners at the egg basket. Tested 7 years. Highest quality—lowest price. FREE CATALOG. Send for copy—do it now. Satisfied customers all over West. Write

FOWLER EGG FARM
Fowler, Colo.

BABY CHICKS——EGGS FOR HATCHING

HIGHEST QUALITY AND THEN THE LOWEST PRICE POSSIBLE. WE ARE THE LARGEST BREEDERS OF IMPROVED STRAINS PURE-BRED

Single Comb White Leghorns

In Colorado. All eggs or chicks from our own matings on our own farm, hatched by experts. You take no chances; safe delivery guaranteed. Colorado climate poultry will give your flock a new lease on life that cannot be had in any other way. Send for catalog. It illustrates and describes all.

Merk's Poultry Farm, Box L, Rocky Ford, Colorado

ALFALFA SEED FOR SPRING SOWING. From locality where it grows best and most abundantly. Our seed won the Gold Medal at the St. Louis World's Fair, in competition with the world. We also handle White and Yellow Sweet Clover. Write us for prices and free samples. Address McBETH SEED HOUSE, 320 Main, Garden City, Kan.

GUARANTEED GENUINE EVERLASTING
GRIMM ALFALFA
Produces big profits as seed crop. Patrons of mine in Nebraska, Dakota and Montana have grown and marketed as high as $200 worth of seed per acre. Booklet, "How I Discovered the Grimm Alfalfa," with samples and testimonials, FREE.
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UNITED STATES NATIONAL BANK
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Operating under the Federal Reserve Act has established a
FARM LOAN DEPARTMENT and CATTLE LOAN DEPARTMENT
Reasonable Rates offered farmers and stockmen without commissions

LEPAGE'S GLUE HANDY BOTTLES
WHEN A NAIL WON'T DO 10¢

Strawberries On the Farm

No one is better equipped to grow strawberries, either for home use or for market, than the general farmer. He has plenty of land and manure as well as horses and tools, and the work of caring for the strawberries can be done during his spare time. With strawberries on the farm, all of the members of the family can have this best-of-all fruit picked fresh from the vines just when they want it, with no expense and without the inconvenience of having to go to town to get it. And besides that, berries which are grown right at home and freshly picked are far more delicious than any berries one may buy, no matter what price is paid for them. This convenience and saving and the advantage of having freshly picked berries should appeal to every farmer and convince him that strawberries on the farm are as necessary as the regular farm garden.

How many farmers would consider going without garden vegetables, or buying them in town? It would be absurd to do so and there is no more reason why any farmer should buy strawberries than the vegetables he grows in his garden. Many farmers now are not only growing strawberries for home use, but also for an early cash crop. General farm crops are not ready for market until fall, while strawberries give a cash income during early summer and if the everbearers are grown, the profit continues until freezing weather.

Everbearing Strawberries

The Everbearers are no longer an experiment, but a proven success. They are just as certain to fruit in the late summer and fall months as the standard varieties are to fruit in the early summer months, and on account of their hardiness and vigor, Everbearers are recommended as ideal for the Mountain states.

Culture

There is no question but that the hill system is the easiest, simplest, and the most profitable way to grow strawberries. Strawberry plants, like fruit trees, must have a sufficient area for their roots and they must also be grown so the sun and air can penetrate thru their foliage in order to bring the berries to full maturity and the highest state of perfection. The soil is prepared just the same for strawberries as it is for common garden vegetables and the plants are set in the same manner as the tomato, cabbage or any other vegetable plant. Rows should be forty inches apart and plants set fifteen inches apart in the rows, and all runners should be pruned off. The plants should be set in check rows so that they may be cultivated both ways, using a horse cultivator for the forty-inch space and a hand cultivator for the fifteen-inch space. All runners should be pruned every two or three weeks until midsummer. As the runners are removed, the plants increase in vigor, size and productiveness.

How to Apply Manure

Growers who have plenty of stable manure at their command will find it profitable to apply additional manure between the rows after plants are set. This may be done any time during the growing season, but the best time is during the latter part of June or in July.

It goes without saying that plants should be kept mulched in order to keep the fruit clean, and for the purpose of retaining moisture during the fruiting season. It is not absolutely necessary, however, to mulch the everbearing plants the season they are set, as the berries are produced beneath the foliage, which keeps them clean enough. For the second crop, the everbearers should be mulched the same as the standard varieties. Mulching should be applied between the rows only, as it will naturally work under the plants to a certain extent and the foliage will keep the berries in the rows clean.

The above applies to dry land farming as well as to the irrigation districts. Every dry land farmer should have a garden irrigated with water pumped by the windmill. Strawberries can thus be grown with very little trouble; in fact with as much ease as any other garden plant. The Everbearing being a hardy variety, does well with a minimum amount of moisture.

EVERBEARING STRAWBERRIES

THE SMALL FRUIT

For the Irrigation and the Dry Land Farmer

Everbearing Strawberry Plants for You FREE

EVERBEARING STRAWBERRIES are the small fruit for both the irrigation and the dry farmer. They are the ideal plants for the mountain states—hardy, vigorous, bearing a crop the first season. Just as sure as you plant a bed of Everbearing Strawberries, just so sure are you of raising a good crop that will supply you strawberries for home use and market, too.

The Everbearing Strawberry is just what the name implies. When set out in the garden in the mountain states it will commence to bear a heavy crop of fine, red, deliciously-favored strawberries the last of July and continue thru August and September until stopped by severe freezing weather.

The Everbearing Strawberry has a wonderful root system which adapts it to the farms of the mountain states. Often the roots go into the soil to a distance of a foot and a quarter. The roots thus get down into the moist earth and enable the plants to produce fine large berries right along during the entire summer and fall. The plants are very hardy and the blossoms will stand a light spring frost without injury. Should a heavy enough frost occur to kill the blossoms of the Everbearing Strawberry plant it will only put your crop off a little longer, for the plant will come right out again as full of bloom as before. No other berry can equal it. No other is so dependable. No other surpasses it for the Western farmer.

You have a plot of ground in the garden or near the house that will do more good to you and your family in strawberries than in anything else. You furnish the ground and WESTERN FARM LIFE will furnish the strawberry plants. A single bed (7½ feet wide by 1 rod long) should yield about 50 pints. A double bed (1 rod square) about 150 pints.

We have arranged to supply our readers with special plants of the highest fruiting quality. They can get these Everbearing Strawberry plants free by merely extending their subscription either one year or three years from the present date of expiration. Enough plants for a single bed for those that desire to extend their subscription for only one year. Enough plants for a double bed to those that extend their subscription for three years.

Here is what two Western growers have to say about Everbearing Strawberries:

Boulder, Colo., November 20, 1916.

Sirs: I planted my Everbearing Strawberries the 22nd of last April, and by keeping off the blossoms during June and part of July, about the middle of July we had all the Everbearing Strawberries that we could eat and of the most excellent flavor, and right thru until the 6th of November, when a heavy snow stopped them and the temperature of Nov. 13th (15 below zero) prevented them from "catching up." I am enclosing you a photograph of the bed covered with snow, October 23, 1916, and a photo of the same taken a week later, showing blossoms and berries still on the plants, and apparently no damage done.

This patch of berries was planted on a steep hillside in Bummer gulch, about six miles of Boulder, Colo., at an altitude of 7,500 feet, and are not irrigated.

I think they are the equal to the BEST BERRY that I've ever eaten. "Me for them." B. LINDEMUTH.

Moscow, Ida., January 1, 1917.

Have had splendid success with the Everbearing Strawberry plants. From $5.00 worth of plants I sold $65.00 worth of berries the first fruiting season. Not so bad for a beginner, is it?

SOL PEIFFER.

Now, just as sure as these and hundreds of other Western farmers have been able to grow nice, big, luscious Everbearing Strawberries, you can do the same if you will but send for your plants. What is there that you and your family would enjoy more than nice strawberries this summer and fall? If you will plant a bed of strawberries this spring you will have strawberries for your table all summer and fall, just as sure as the sun shines on a cloudless day. Strawberries can be successfully grown wherever garden vegetables can be raised.

There is a very short crop of Everbearing Strawberry plants all over the country and so popular has the variety become, it is almost certain that the demand for berry plants will far exceed the supply for spring setting, so we urge you to decide now on the number of plants you want and fill in the coupon below and get your order off to us without delay. Full instructions as to planting and care will accompany your plants.

OUR SPECIAL "100 PLANT" OFFER: We will send 100 PLANTS, enough to plant a piece of ground a little over two rods square. This should produce the first season about 300 plnts of berries. These 100 plants are FREE with your five-year extension subscription to Western Farm Life.

COUPON

Western Farm Life, Denver, Colo.:

I would like to try some of your Everbearing Strawberries this spring. Put me down for the number of plants and subscription extension I have checked below.

[ ] OFFER NO. 1—Send me Everbearing Strawberry plants for single bed (18 plants) and extend my subscription for one year. I enclose $1.00 in payment.

[ ] OFFER NO. 2—Send me Everbearing Strawberry plants for double bed (48 plants) and extend my subscription for three years. I enclose $2.50 in payment.

[ ] SPECIAL "100 PLANT" OFFER—Send me Everbearing Strawberry plants for large plot (100 plants) and extend my subscription for five years. I enclose $5.00 in payment.

The plants are to be delivered in good condition, ready to plant.

Name.....

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We prepay transportation *only* on 100 plants.

Farmers' and Stockmens' Exchange

Advertisements will be inserted in this department for 5c per word; four or more insertions, 4c a word each insertion. Remittances can be made by postoffice money order or personal check. Advertisements are set in uniform style, no display type or illustrations admitted under any circumstances. Every figure and initial counts as one word. Guaranteed circulation over 50,000 copies each issue. WESTERN FARM LIFE is issued semi-monthly the first and fifteenth of each month. Advertising copy for this department must reach us ten days before date of issue. It carries the most classified advertising because it gives you best results. Send us in a trial advertisement. Write for proof showing how these columns pay advertisers.

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Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

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PURE BRED SINGLE COMB BARRED ROCK egg—15, $1.00; 100, $4.00. Otho Farmer, Farnam, Neb.

BARRED PLYMOUTH ROCK COCKERELS FOR sale—From extra good laying strain; $2 to $3 each. Mrs. C. W. Douglass, Wray, Colo.

REMOVAL SALE—BREADWINNER WHITE Rocks. Blood of 200 to 301 egg layers. Particulars. Doble, 2434 So. Race St., Denver.

PARTRIDGE ROCKS. LARGE TYPE COCKerels, good color, ready for service. Eggs ready for early hatching. Roy Sutton, Minneapolis, Kansas.

BARRED PLYMOUTH ROCKS, EGGS FOR hatching from four choice pens. Send for mating list. Chester Blunt, Route 1, Greeley, Colo.

BARRED PLYMOUTH ROCK EGGS FOR hatching, from heavy laying strain; also Silver Spangled Hamburg eggs at $5.00 per 100. Chas. Voss & Son, Hubbard, Neb.

BARRED ROCK COCKERELS AND PULLETS. Also baby chicks. Barred Rock and White. Leghorn after March 1st. Green Poultry Co., Haigler, Neb. Established 1910.

BARRED ROCKS—WINNERS AT INTERSTATE Show, Sioux City, Omaha and State Show. Eggs $2.00 and $3.50, both matings. Can please you. W. J. Krieger, Tripp, S. D.

WHITE ROCKS—ALL STOCKS, INCLUDING first and second cockerels Denver Auditorium, first and second hens Nartional Western Stock Show, and other winners. For particulars address B. F. Witt, 3234 Vine St., Denver, Colo.

PARTRIDGE PLYMOUTH ROCKS — THE beauty and utility breed, stock for sale that are prizewinners. Pullets $2.00, cockerels $3.00 to $5.00 each. Eggs for hatching $1.50 and $3.00 for 15 eggs. Satisfaction guaranteed. A. R. Stover, Manzanola, Colo.

"RINGLET" BARRED ROCKS, WINNERS wherever shown. Large size, big bone, excellent quality. Both matings. Eggs: Fancy matings, $2.50 to $5.00 per 15; range flock, $1.00 per 15; $5.00 per 100. Mating list free. Jos. V. Beran, Box 374B, Verdigre, Neb.

LEGHORNS

S. C. BLACK LEGHORN COCKERELS. WILliam Cross, Utica, Neb.

TIP TOP ROSE COMB BROWN LEGHORN eggs. J. E. Wright, Wilmore, Kans.

SINGLE COMB WHITE LEGHORN EGGS, $4.50 per 100. Mrs. C. C. Cole, Levant, Kan.

SINGLE COMB BROWN LEGHORNS. WINners in three states. W. Roof, Maize, Kan.

SINGLE COMB WHITE LEGHORN BABY chicks, 10 cents each. Anna Hege, Sedgwick, Kans.

PURE BRED S. C. BROWN LEGHORN EGGS for hatching, 85c per doz. Mrs. Alice Wolfe, Flagler, Colo.

SINGLE-COMB WHITE LEGHORN EGGS, ENGlish Barron strain. Baby chicks. F. B. Morger, Fowler, Colo.

TOM BARRON'S WHITE LEGHORN HATCHing eggs and baby chix, reasonable. Free circular. Andy Mikkelson, Utica, Neb.

HEWITT'S S. C. BUFF LEGHORNS, COCKERels $2.00 each. Eggs $1.00 per 15, 50 for $3.00, 100 for $5.00. Mrs. Philo Hewitt, Lexington, Neb.

LAYERS—S. C. W. LEGHORNS, MATED WITH male extra winter egg type. Setting, $2.00. Chick order early guaranteed. Henry Mehl, Lorraine, Kan.

SINGLE-COMB BROWN LEGHORNS, TRIO $10.00, pen $15.00, cockerels $2.50 up, eggs $7.00 hundred. Setting $2.00. Prepaid. Chas. Bowlin, Olivet, Kansas.

SINGLE COMB WHITE, S. C. BROWN LEGhorns, bred-to-lay strains. Eggs $2.00 for 15, $3.00 for 50, $6.00 for 100. Plainview Poultry Farm, Lebo, Kans.

EGG-BRED, BARRON STRAIN, SINGLE COMB White Leghorns. Hatching eggs and baby chicks for sale. Write for catalog. The Rowley-Egg-Farms Company, Palisade, Colo.

EGGS FROM CHOICE EXHIBITION MATINGS. S. C. Buff, Brown and White Leghorns; every bird a winner; $3.00 per 15. Guaranteed hatches. L. P. Harris, College View, Neb.

ROSE COMB BUFF LEGHORNS EXCLUSIVELY. "Frost-proof combs" means winter eggs. The largest leghorn. Select eggs 15, $1.50; 100, $5.00. Goldenrod Poultry Farm, Mesa, Colo.

RIVERSIDE POULTRY FARM S. C. WHITE Leghorns. Heavy winter layers. Range raised. 12 years in the business. Hatching eggs, baby chix for sale. H. D. Walker, La Junta, Colo.

EXTRA GOOD SINGLE COMB WHITE LEGhorns—Pure white, low-tailed males mated to heavy laying females. Eggs $5.00 per 100; setting, $1.50. Order now. E. D. Allen, Inland, Neb.

SINGLE COMB WHITE LEGHORN EGGS, trap nested, $1 setting. Eggs from hens that lay 2 eggs in one day, $1.00 each. Baby chicks, 10c each. E. M. Stark, Farmington, N. M.

S. C. W LEGHORNS, HATCHING EGGS FERtility guaranteed; day old chix, horn with a "hustle" in them From trap nest recorded and Hoganized parents. Order now for March to July deliveries. Satisfaction guaranteed. Established 1908. Rosawill Poultry Farm, R. No. 4, Box 60, Denver, Colo.

UNIVERSITY PARK POULTRY RANCH—BABY chicks and hatching eggs. To every thinking breeder, this wonderful line-bred stock of thoro, heavy-laying Single Comb White Leghorns, which will reproduce themselves; bred to shell out eggs and do it. For sale, hens, pullets and cockerels. Send for circular. Orders taken for March delivery. Chicks from 241-egg trapnest stock, $18 per 100; chicks from 200-egg Hoganized test, $15 per 100; guaranteed hatching eggs; also settings; special prices in incubator lots, prepaid to your express office in lots of 30 or more; guaranteed live delivery. I also guarantee what I advertise. Visitors welcome. 2520 S. Clayton, Phone South 337. Denver, Colo.

RHODE ISLAND REDS

ROSE COMB RED CHIX. XRAY INCUBATOR cheap. Lily Robb, Neal, Kan.

RHODE ISLAND REDS—EGGS 100, $4.00—Mrs. Henry Williams, White City, Kan.

SINGLE COMB REDS. WHITE LEGHORNS and Orpingtons, free list. Glenn Davison, Grand River, Iowa.

PURE BRED R. C. R. EGGS FOR HATCHING, $1.25 per 15; $5.00 per hundred. Mrs. F. A. McGuire, Paradise, Kan.

THOROBRED SINGLE COMB RHODE ISLAND Red eggs, $3 and $5 per setting. Faith's Reds, 711 Polk, Pueblo, Colo.

PRIZE STOCK, ROSE COMB REDS. EGGS 75c to $1.25; $5.00 per 100; fertile. A. Stevens, 3239 Race St., Denver.

EGGS FOR HATCHING, ROSE COMB REDS exclusively; prize-winning, heavy laying strain. Write for mating list. E. A. Miller, Alma, Neb.

EGGS FOR HATCHING—ROSE COMB REDS exclusively; heavy laying strain, $1.50 per 15; $6.00 per 100. Mrs. Theo Gerringer, Manzanola, Colo.

FERTILE EGGS, HATCHING FINE; S. C. R. I. Reds, vigor, size, color; 700 winter layers; hen-hatched, farm-raised, $6 per 100; $50 per 1,000. Mrs. J. M. Erwin, Arvada, Colo.

EXHIBITION AND HEAVY LAYING TYPE Single Comb Reds. We are the oldest breeders of reliable Reds in the West. Eggs now ready for hatching, $6.00 per 100. Send for circular. Lower's Poultry Farm, Arvada, Colo.

FREE—HOW TO MATE AND BREED RHODE Island Reds. Just what you want to know but could not get correct information. Send stamp. Trapnested stock, both combs, big, dark velvety red strain for sale. Ava Poultry Yards, Ava, Mo.

SIX GRAND PENS ROSE COMB REDS, MATED to roosters costing $15.00 to $50.00. 15 eggs $2.50; 30 eggs $4.00; 50 eggs $6.00. Pure bred range flock, $5.00 per 100. Baby chicks. Send for catalog. W. R. Huston, Americus, Kan.

ORPINGTONS

ORPINGTONS, WHITE OR BUFF. LIST FREE. Frank Lewis, Superior, Neb.

WHITE ORPINGTON EGGS FROM VERY BEST laying strains, $1.50 fifteen; $6.00 hundred. Express paid. J. H. Lansing, Chase, Kansas.

S. C. BUFF ORPINGTON COCKERELS OF correct shape and color, big bone, blue ribbon winners, $3.00 to $5.00. Geo. S. Turner, Canon City, Colo.

TO ADVERTISE MY BUFF ORPINGTON EGGS from prize winners, for hatching, $1.60 for 15. Prepaid Colorado. Stricker, 41st and Charles, Omaha, Neb.

WHITE ORPINGTONS—ALDRICH STRAIN DIrect. Eggs $1.50. Two extra choice pens, $3.00 per 15. Fertility guaranteed. H. M. Goodrich, 712 Topeka avenue, Topeka, Kan.

EGGS, EGGS, EGGS—FROM MY S. C. BUFF Orpingtons that are Buff; not the cheapest, but the best. They weigh, win and lay. Eggs $1.50, $3.00 and $5.00 per 15. Utility $7.00 per 100. State Vice-Pres. National S. C. Buff Orpington Club. F. M. Shank, R. No. 2 A, La Junta, Colo.

WYANDOTTES

WHITE WYANDOTTE EGGS FROM TRAPnested stock. Mary M. Wright, Route 2, Boulder, Colo.

SILVER LACED WYANDOTTE EGGS $1.25 per 15, $3.00 per 50, $6.00 per 100. Mrs. H. R. Young, Stella, Neb.

WYANDOTTES—WHITE AND COLUMBIAN.—Won firsts five states. Eggs. Catalog. Templedotte Farm, Lexington, Neb.

FOR SALE—THOROBRED COLUMBIAN WYANdotte eggs for hatching, $1.00 per 15 or $5.00 per 100. Mrs. Wm. Heitman, Clay Center, Kan. Route No. 3.

WHITE WYANDOTTES—COCKERELS $2.00 and $3.00; eggs, $2.00 and $1.00 per 15, and $3.00 per 30; $5.00 per 100. Miss Anna Lansdown, Fort Lupton, Colo.

ANCONAS

SINGLE COMB COCKERELS, $2.00. Eggs, $1.50 set 15, $5.00 per 100. Quality Ancona Yards, Morganville, Kan.

MATCHLESS MOTTLED ANCONAS, EGGS $1.50, $2.00, $2.50, $3.00. Prize winning stock. Cockerels $5. Mrs. D. S. Davis, 140 Jackson St., Denver, Colo.

BRAHMAS

MY LIGHT BRAHMAS AGAIN WIN SWEEPstakes in the big 1917 Denver Stock Show. Hatching eggs for sale; prices reasonable. E. Grosser, W. 23rd and Perry, Denver.

CORNISH

QUALITY DARK CORNISH, THE IDEAL FARM fowl. W. W. Officer, Fowler, Colo.

JANDEBEUR'S QUALITY DARK CORNISH—Hatching eggs from prize winners; eggs $1.50 up. Baby chicks 15c up. Write for mating list. R. H. Jandebeur, Alma, Neb.

MINORCAS

BUFF MINORCA EGGS FOR SALE, $1.50, $3.00 and $5.00 per 15. Red River Poultry Farm, Devol, Okla.

S. C. BLACK MINORCAS—PRIZE WINNERS. 14 prizes won out of 16 birds exhibited at Kansas State Fair. Stock, eggs and baby chix for sale. F. Kremer, Manchester, Okla.

BUTTERCUPS

SICILIAN BUTTERCUPS, THE FOWL FOR farmer, fancier and family. Circular and mating list free. W. Bachmann, 1039 Fillmore st., Denver, Colo.

LANGSHANS

PURE BRED BLACK LANGSHAN EGGS—B. S. Kuhn, York, Neb.

FARM RAISED, PURE BRED WHITE LANGshans; hens, pullets, cockerels, eggs. Mrs. Geo. McLain, Lane, Kan.

MOTHER'S AND MINE FOR 17 YEARS. WHAT? Quality, farm-range White Langshans. Eggs $6.00 per 100; $1.25 per 15. Mrs. Jas. Dorsett, Tonkawa, Okla.

BLACK SPANISH

WHITE-FACED BLACK SPANISH, FROM THE best stock to be obtained in this country. Have sold out on stock, but can furnish eggs $2.00 per setting, $10.00 per 100. W. W. Yale, Chickasha, Okla.

GUINEAS

GUINEAS PROFITABLE—EASY TO RAISE AS quail, $5.00 trio. "The Copes," Topeka, Kan.

DUCKS

ROYAL BLUE STRAIN RAUEN DUCKS, $1.75 each. Eggs in season. Jas. Cassell, Fremont, Neb.

RUNNER DUCKS AND POLISH EGGS, $1.00 setting. Undefeated; best. Ora Dubbs, Douglas, Kan.

WHITE PEKIN DUCK EGGS, $1.25 PER SETting. Ducklings 22c each. A large fast-growing strain. Wm. M. Jones, Arvada, Colo.

TURKEYS

BOURBON RED TURKEY EGGS. MRS. FRED Campbell, Eaton, Colo.

BABY CHIX

BABY CHICKS, 11 STANDARD VARIETIES. Kansas Poultry Co., Norton, Kan.

RESERVE BABY CHICKS NOW; FROM sturdy, farm-reared Rocks, Reds, Orpingtons, Wyandottes, Leghorns; safe delivery by hundreds or thousands, guaranteed. Red Hen Poultry Farm, Hastings, Neb.

SPRINGVALE POULTRY FARM—DAY OLD Chix delivered to your express office, all charges paid, guaranteed alive. Large strain S. C. White and Brown Leghorns, $15.00 per 100; Barred Rocks, R. C. Reds, Buff Orpingtons and Black Langshans, $17.00 per 100. Leftovers above breeds, $13.00 per 100. Hatched in the right climate and in the right way to live when you get them. Edwards Steinhoff, Leon, Kan.

SEVERAL VARIETIES

REDS, ROCKS, LEGHORNS, 12½c. REQUEST folder. McCune Hatchery, Ottawa, Kansas.

FOR SALE—Chicks and eggs from S. C. W. Leghorns and Rhode Island Reds. J. O. Bartholomew, Rocky Ford, Colo.

EGGS, $1.50 PER SETTING. LEGHORNS, Reds, Rocks, Wyandottes, Orpingtons. Royal Poultry Yards, Coffeyville, Kans.

BARRED ROCKS, TOULOUSE GEESE AND White Indian Runner Ducks. Collie pups. Mrs. Frank Davis, Holbrook, Neb.

FOR SALE—WHITE WYANDOTTE AND LEGhorn cockerels. Prize stock. Reasonable. Setting eggs. Mrs. A. C. Fye, Boulder, Colo.

SINGLE COMB REDS AND BUFF LEGHORNS. Eggs for winter layers by the 100. Elmer Carson, 34th and California, Omaha, Neb.

EGGS FOR HATCHING—MATING LIST FREE. S. C. Buff Orpingtons, Toulouse Geese, Indian Runner Ducks. Peter Brehm, Harvard, Neb.

HALL'S S. C. REDS AND WHITE ROCKS WIN again at the Great Denver Stock Show. Eggs $1.50 per setting up. Mating list free. Stock for sale. Liston L. Hall, Gering, Neb.

IF YOU DON'T FIND ADVERTISED HERE what you want, write our classified advertising department and they will be glad to place you in correspondence with the right parties.

EGGS WANTED FOR HATCHING FROM PUREbred farm-raised stock. Write us what kind you have. Highest prices paid by the case. Denver Incubator Co., 177 S. Broadway, Denver, Colo.

COLUMBIA HATCHERY—ALL LEADING VArieties of baby chicks, cockerels and hatching eggs. Reds, Rocks, Leghorns, Orpingtons, etc. Live delivery of baby chicks guaranteed to your express office. We ship to all parts of Colorado, Wyoming, New Mexico. Write for price list. P. O. Box 1102, Denver.

COCKERELS, $2. PULLETS, $1.50 EACH. Can make up some good pens at very reasonable prices. All the leading breeds. Now is the time to order eggs for early spring delivery, $1.50 per setting; $6.00 hundred. Booking orders now for baby chicks. J. L. Keating, Box 357, Kansas City, Mo.

EGGS, EGGS—FROM THOROBRED TURKEYS, geese, 8 kinds of ducks, Pearl and White Guineas, Barred, White and Buff Rocks, Houdans, Rhode Island Reds, Hamburgs, Games, White and Silver Laced Wyandottes, Leghorns, Langshans, Light Brahmas, Minorcas, Cochins, Buff and White Orpingtons, Bantams, also Hares, Rabbits, Guinea Pigs and Fancy Pigeons. D. L. Bruen, Platte Center, Neb. Write wants.

EGGS FOR HATCHING. TURKEYS 200 apiece. Toulouse geese 25c apiece. Pekin ducks 15c apiece. Plymouth Rock eggs, $1.50 setting of 15. Mrs. C. J. Davidson, Ft. Lupton, Colo.

INCUBATORS

IT'S GOOD BIG HATCHES YOU WANT THIS year. Denver incubators are built and tested for this dry climate and positively do the work. Get our free catalog. Low prices, with freight prepaid. Coal heated colony brooders. Baby chicks and eggs for hatching from purebreds. Denver Incubator Co., 177 S. Broadway, Denver, Colo.

PET STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

FOR SALE—FIVE WOLF HOUNDS. SEND stamp for reply. Jack Hand, Friend, Kan.

YOU CAN MAKE A GOOD LIVING IN YOUR back yard raising Belgian hares. Particulars and price list of all breeds, 10 cents. Thorson's Rabbitry, Aurora, Colo.

IF YOU DON'T FIND ADVERTISED HERE what you want, write our classified advertising department and they will be glad to place you in correspondence with the right parties.

LIVE STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

CATTLE

MILKING SHORTHORNS AND JERSEYS FOR sale. W. A. Wight, Las Animas, Colo.

IF YOU DON'T FIND ADVERTISED HERE what you want, write our classified advertising department and they will be glad to place you in correspondence with the right parties.

A. M. McClenahan, the Jersey breeder of Greeley, recently sold to John E. Philpott, Fort Lupton, three registered cows and a registerd bull as the foundation for another Jersey herd in Colorado.

100 HEAD OF HIGH GRADE HOLSTEIN COWS and heifers. A few yearling pure breds, and six bulls serviceable age and very well bred. Will not be at home until after the 5th of April. M. E. Penrose, 1855 Blake St., Denver. Main 5713.

WE CAN SELL 15 YEARLING BULLS AND about 30 bull calves, all registered, and of the best breeding and individuality. Among the yearlings are three herd headers, also one 4-year-old bull by Simoon. All at popular prices in order to sell. J. O. D. Ranch, Aroya, Colo.

REGISTERED JERSEYS AND MILKING Shorthorns. Jersey herd headed by Maggie's Shy Duke 140084, Grand Champion Denver Stock Show. Two nearest dams average 54 lbs. milk per day. Shorthorns headed by Independence Lee 427351. Two grandams average 9023 lbs. milk in one year. The Hinman Silo Co., 1650 Champa st., Denver.

HOGS

REGISTERED BIG TYPE DUROC JERSEY hogs for sale. Edgemoor Farm, Littleton, Colo. Caldwell Martin, Owner.

REGISTERED DUROC JERSEY BOARS AND gilts, sell at $15 and up according to age and quality. We are sold out on bred gilts, but can contract for gilts to be bred for later farrowing. Our sales at the Denver yards speak for the quality. J.O.D. Ranch, Aroya, Colo.

HORSES

REGISTERED PERCHERON AND STANDARD bred mares for sale. E. C. Mason, Boulder, Colo.

FOR SALE—IMPORTED ENGLISH SHIRE Stallion Wailstone James, weight 1,850. Geo. S. More, Route 2, Edgewater, Colo.

FOR SALE—IMPORTED ROAN 8-YEAR BELgian stallion, 2,100. One 3-year bay Belgian, 2 roan yearlings. As good as you will find anywhere. Purinton Bros, Wilcox, Neb.

REGISTERED PERCHERON STALLIONS FOR sale or trade. One black, 9 years old, weight 2,100. One black, 2 years old. Two black yearlings. E. E. Watters, Rocky Ford, Colo.

NOBLE REX, 5-YEAR-OLD REGISTERED SADdle-bred stallion, 16 hands, black, 1,200 lbs. Grand individual, goes all five gaits; winner of stallion class at 1917 Denver Stock Show. By a son of the immortal Rex McDonald. Price, $750. Can be seen at Denver Cab and Omnibus Co. Stables, Denver, until April 1. After that at J.O.D. Ranch, Aroya, Colo.

JACKS AND MULES

KIT CARSON, A BIG-BONED 7-YEAR-OLD jack, winner at Denver show, $500. Also a great yearling jack, promises to be bigger and better than his sire, and out of a jennet who took first at Denver also; price, $250. We have some excellent mules for sale; all ages and sizes. J.O.D. Ranch, Aroya, Colo.

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WANTED—TO HEAR FROM OWNER OF good farm for sale. Northwestern Business Agency, Minneapolis, Minn.

IMPROVED RAINBELT RANCHES, $10 TO $35 per acre; less for unimproved; any size tract. See us before buying. Jahnke & Konkel, 1410 Stout St., Denver.

400 ACRES NON-IRRIGATED LAND, SHALlow to water, dark loam soil, lays practically level with south slope; good fence, near school; good farms surround same. Price $15.00 acre.

'erms. 22 miles of Denver, 7 miles good town. A. J. Simonson, 214 Cooper Bldg., Denver.

VANTED—HEAR FROM OWNER GOOD FARM for sale. Cash price; description. D. F. Bush, Minneapolis, Minn.

'ARM WANTED—WANTED TO HEAR FROM owner of farm or fruit ranch for sale. O. O. Mattson, 2949 Cedar Ave., Minneapolis, Minn.

VANTED—TO HEAR FROM PARTIES WHO have real estate to sell or exchange, as we ave hundreds of customers that are in the market. Our plan is absolutely certain, as we positively guarantee you a customer or we make no harge or have no fee. Address Real Estate Dept., Weldon Valley Adv. Co., Weldona, Colo.

AND—I HAVE PLACED OVER 400 FAMILIES in Weld county, mostly on homesteads and elinquishments. I know nothing desirable left pen to entry, but can still furnish partly improved relinquishments or deeded lands at very ow price. Call for list. Every statement guaranteed. Land shown by auto from Denver. Mackley, 1643 Champa, Denver, Colo.

OREGON AND CALIFORNIA RAILROAD CO. Grant Lands. Title to same revested in United States by Act of Congress dated June 9, 1916. Two million three hundred thousand acres to be opened for settlement and sale. Power site, timber and agricultural lands, containing some of the best land left in the United States. Now s the opportune time. Large sectional map showing lands and description of soil, climate, rainfall, elevations, etc., postpaid for one dollar. Grant Lands Locating Co., Box 610, Portland, Ore.

I HAVE 160 ACRES OF AS GOOD LAND AND as good a water right as there is in the West. Sixty acres under ditch and in cultivation. Good house, well and other improvements. The entire 160 acres is all good level land. It is located adjacent to forest reserve and is an ideal place to farm and run a nice bunch of cattle. I am so situated that it is necessary for me to make a quick sale. I will sell for $6.00 an acre payment down; 10 years' time on the balance, or will consider part payment in trade with no money down. I want to turn this land and all you need to do is to show me you mean business. Write me if interested for further details and how you would prefer to make payments. Sidney E. Bartlett, 1402 Arapahoe St., Denver, Colo.

HELP WANTED

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

MAN TO WEAR FINE SUIT, ACT AS AGENT. Big pay, easy work. Banner Tailoring Co., Dept. 502, Chicago.

WE WANT A RELIABLE MAN OR WOMAN TO handle subscriptions in each community. Liberal terms. Write us today. Western Farm Life, Denver, Colo.

MEN—BECOME GOVERNMENT RAILWAY mail clerks, $75 to $150 month. Every second week off with pay. Education unnecessary. Sample examination questions free. Write immediately. Franklin Institute, Dept. A 177, Rochester, N. Y.

WANTED—IMMEDIATELY, 500 MEN, 20-40, for railway motormen and conductors; all parts United States; $60-$100 month. Experience unnecessary. Send stamp for application blank. National Railway, Dept. 188, Kansas City, Mo.

LUMBER

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

LUMBER—POSTS AT LOWEST PRICES. GET our delivered prices. Send lumber list for estimate. Pay after unloading. Kirk Company, Tacoma, Wash.

IF YOU DON'T FIND ADVERTISED HERE what you want, write our classified advertising department and they will be glad to place you in correspondence with the right parties.

SEEDS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

HIGH ALTITUDE SEED PINTO BEANS, $9.50 per cwt. L. M. Hunt Grain Co., Colorado Springs, Colo.

BLACK HULLED WHITE KAFIR SEED, RECleaned, tested and sacked, $2 per bu. Grover Lee, Pratt, Kan.

WHITE SWEET CLOVER, NEW CROP, SCARIfied, high germination, $10.80 bushel. Wesley Foster, Boulder, Colo.

BLACK HULLED WHITE KAFFIR SEED—Recleaned, $2.25 per bu. 1916 crop. Well matured. H. W. Chestnut, Kincaid, Kan.

ALFALFA SEED AT VERY REASONABLE prices. I am selling lots of it in Colorado now. Free sample. "Alfalfa John" Franklin, Beaver City, Neb.

DAHLIAS, 185 NAMED KINDS; CANNAS, HARDY flowers, shrubs and fruit. Write for prices. James McMullen, Franklin Ave., Council Bluffs, Iowa.

SEED PEAS—SAN LUIS VALLEY SEED PEAS. Prices and samples gladly submitted. Local and carload shippers. A. A. Salazar & Son, San Luis, Colo.

CHOICE SUDAN GRASS SEED, RECLEANED, free from Johnson grass, at 30c per lb. In 100-lb. lots. Smaller quantities, 35c. J. K. Burke, Estacado, Texas.

WHITE AUSTRALIAN SEED CORN, EXCELlent quality, grown on dry land near Denver. In lots of 100 pounds or more, 4c pound. D. W. Jackson, 1360 St. Paul, Denver.

CHOICE SEEDS, DWARF AND STANDARD Kaffir Corn, Dwarf White and Yellow Milo Maize, White, Red and Black Cane Seed, Broomcorn seed, Sudan, Sweet Clover and other seeds. I. T. Reid, Goodwell, Okla.

IF YOU DON'T FIND ADVERTISED HERE what you want, write our classified advertising department and they will be glad to place you in correspondence with the right parties.

WHITE TEPARY BEANS—THEY WILL STAND more drouth than any other crop raised in the semi-arid region. My crop produced over 1,000 lbs. per acre without irrigation. Price ten cents per lb. here. H. H. Beckwith, Caddoa, Colo.

FREE 1917 PLANTING GUIDE AND PURE Seed Book; 96 pages. Handsomely illustrated in many colors. Describes latest, best varieties vegetables, flowers, field crops, fruits, shrubbery, etc. A dictionary on gardening. Flower lover's delight. Field crop guide. An orchardist's manual. Berry-grower's book. A postal gets it. Don't buy seeds until you read it. Galloway Bros. & Co., Pure Seed Specialists, Waterloo, Iowa.

NURSERY STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

IF YOU DON'T FIND ADVERTISED HERE what you want, write our classified advertising department and they will be glad to place you in correspondence with the right parties.

MISCELLANEOUS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

PLENTY OF MONEY TO LOAN ON CHOICE farms at 6 per cent. Paul B. Walker, Fort Morgan, Colo.

DELICIOUS ALFALFA HONEY FROM PRODucer. Two 60-lb. cans, $12.75. Satisfaction guaranteed. Wesley Foster, Boulder, Colo.

FARMERS AND STOCKMEN, IF TROUBLED with Loco Weed, you can kill it with our Loco Killer without chopping or digging. Also want men to handle territory. If interested, write Western Mfg. & Trading Co., Box 673 Denver, Colo. Successors to Weisenborn & Huck.

FREE FOR SIX MONTHS—MY SPECIAL OFfer to introduce my magazine, "Investing for Profit." It is worth $10 a copy to anyone who has not acquired sufficient money to provide necessities and comforts for self and loved ones. It shows how to become richer quickly and honestly. Investing for Profit is the only progressive financial journal and has the largest circulation in America. It shows how $100 grows to $2,200; write now and I'll send it six months free. H. L. Barber, 449-20 Jackson Blvd., Chicago.

PATENT ATTORNEYS

IDEAS WANTED — MANUFACTURERS ARE writing for patents procured through me. Four books with list hundreds of inventions wanted sent free. I help you market your invention. Advice Free. R. B. Owen, 162 Owen Bldg., Washington, D. C.

BEE SUPPLIES AND HONEY

BEE SUPPLIES OF BEST QUALITY. SEND for 68-page illustrated catalog. We also sell comb and extracted honey. The Colorado Honey Producers' Association, Denver, Colo.

KODAKS

KODAKS, CAMERAS, PHOTO SUPPLIES—Ford's, the best kodak store, 1029 16th St., Opp. Old P. O., Denver, Colo., for Eastman Kodaks, all makes cameras, films, photo supplies; develop any size roll films, 10c; print pictures, 3c each and up; mail orders solicited; kodak and camera catalogs mailed free upon request. Mention this paper.

An Education in Beans, Potatoes and Corn

Continued From Page 3

intently to an explanation of the points on which cream was judged. Mr. McCann also gave an illustrated lecture on "Silos and Dairying."

"Don't waste your bean straw," was the advice given by the county agriculturist on one of the placards. "It is equal to barley hay, better than wheat hay and will yield usually one-half to three-fourths ton per acre of hay, worth $5 to $8 per ton."

"Begin selecting, grading and testing of all farm seeds now," was another bit of timely advice.

The exhibition was the second of its kind held at Colorado Springs. It is backed by the Chamber of Commerce, the prize money being contributed by the business men, who realize the importance of agriculture and who give their moral and financial support to the work of the county agriculturist. There was a fine showing of dairy products by Colorado Springs creameries and butter factories.

During the last two days of the show the boy and girl club members from all over the county were guests of the Chamber of Commerce. Auto trips were provided to points of interest in and about the city for the young people, who were in charge of County Agriculturist Lauck and Miss Maude E. Sheridan, assistant state club leader.

Full List of Awards

Following are the awards:

Corn—Non-Irrigated

Best ten ears yellow dent—C. R. Clement, Motor Route A, Colorado Springs.

Continued on Page 22

Read the advertisements. They contain valuable information. When you write to advertisers be sure to mention Western Farm Life.

The Grange

C. W. SWAYZE, Editor

Officers

JOHN MORRIS, Golden, Colo., Master.
R. J. ALTIG, Boulder, Colo., Overseer.
C. W. SWAYZE, Stockyards Sta., Colo., Lecturer.
K. S. RHEA, Golden, Colo., Treasurer.
RUDOLPH JOHNSON, 1124 Logan St., Denver, Secretary.
A. H. KRAMER, Aurora, Colo., Business Agent.

To the Members of Subordinate Granges in the State of Colorado:

At our last annual State Grange session, held in Denver, January 16-18, 1917, the State Grange went on record in favor of a local option herd law by districts or county. I appeal to all members of subordinate Granges within the state to write to their senators and members of the state legislature asking them to support house bill No. 318, known as the Kramer herd law. If we can't get this bill through this session of the Colorado legislature we will have to initiate a herd law at our next election, November, 1918.

JOHN MORRIS,
Master Colorado State Grange.

Notice to All Subordinate Granges and Local Business Agents:

The business agent of Colorado State Grange is located in room 415 Charles building, corner Fifteenth and Curtis streets, Denver. Otis Scruggs has been appointed state business agent. Hours will be from 9 a. m. until 4:30 p. m. daily, except Sundays and holidays. Any communications pertaining to this office should be sent to the above address. All Grangers are invited to make this office their headquarters when in the city.

JOHN MORRIS,
State Master.

Enterprise Grange No. 258 holds meetings once a week with a good attendance. There are about fourteen members to be taken into our order at the next meeting. The Granges in this section are planning to organize a Broom Corn Growers' Association, so as to sell their broom corn direct to the factory. A committee has been elected in our Grange and also one in each of our neighboring Granges to prepare for a Farmers' Field Day or fair, which will take place in the fall. February 2nd there was an oyster supper held at the home of the Master, J. W. Houlton. The neighboring Granges were invited and altogether there were about seventy present. All had a very enjoyable time. Our Lecturer is preparing to give a play, which will come off some time this month. There will be a small admission at the door, and the proceeds will go to pay for a gas lamp.

New Subordinate Granges

Laid, Yuma county, by State Master John Morris; 118 charter members.

One at Easton and one at Barnesville, by A. F. Hart.

Olsen, Adams county, by J. F. Girardot.

Wattenburg, Weld county, by C. W. Swayze.

Three in Baca county by T. W. Holton.

Two in Crowley county by F. A. Wells.

Two in Pueblo county by A. W. Stover and J. A. Newcomb.

NUGGETS BY STATE MASTERS.

The master of New Hampshire State Grange said: "Real work, individual responsibility and love of the Grange are important factors which have enabled New Hampshire to bring about the results accomplished in Grange work, and which makes the Grange in our state a power for good in all forward movements."

Pennsylvania, J. A. McSparran, Master.—"The typical Grange, to our way of thinking, is the one that develops the whole quartet of Grange activity, namely: the social feature by which the people of a community are brought together in a way to make friendships easy and natural; the intellectual stimulus that comes from the well-conducted lecturer's hour, and the drill in parliamentary practice; the business contract, by means of which real benefits are paid the members during life and health, and the political field in which the member gets information upon measures and principles, enabling him to exercise a more sovereign citizenship. Where all four of these fields are conscientiously cultivated, the prospect of continuous growth and enthusiasm grows brighter."

Indiana, L. H. Wright, Master:—"The Grange as an organization is being consulted in regard to needed legislation. We are being recognized as an important factor in shaping and spreading the sentiment for cleaner and more economical government; for better social conditions, and for an education for our boys and girls better adapted to the needs of the occupation which they intend to make their life work."

Oregon:—"The Grange in Oregon continues to do its duty in whatever field opportunity offers in the interest of agriculture. The social and educational advantages are not neglected. Legislative work is an important part of our program."

Missouri:—"The attention of our members is now being directed toward a better marketing system, a road system that will take care of the farmer's road to market, church and school, and the building of community and Grange halls."

Illinois:—"We have this thought to cheer us—that in every locality where active Grange interest prevails, that interest is fostered and supported by the very best class of citizens."

New National Brand of Flour

The Community Marvel Mill association, with headquarters at Owensboro, Ky., is a recently organized milling association with over one thousand active members, producing flour of high quality in almost every section of the United States. This new brand of flour is called Flavo. One thousand mills will be under the supervision of a service department so organized that it will be able to systematize the operations of these unit mills and secure uniformity in production equal that of any single milling plant producing the highest grade of flour sold under the best known brands.

An extensive advertising campaign is being conducted. Several national publications and hundreds of publications with local circulation will be used in placing the merits of Flavo flour, nature-flavored, before the public.

How to Produce Paying Crops of Pinto Beans

Continued From Page 4

irrigation is to use a furrow opener and make furrows between the rows. Water is run down these furrows under proper control, until the soil is moistened laterally and to a depth of at least two feet. This figure two feet is a relative one. Sometimes there is moisture enough in the subsoil at less than two feet from the surface when the surface needs irrigation. In such cases a lighter run of water will suffice. The last irrigation should very seldom be given after the blooming period—just as the plants are coming into bloom is as late as water should be applied in ordinary seasons, and on ordinary soils. Later irrigations delay the maturity of the crop and endanger proper ripening, because of possible frost injury. Such later irrigations do not materially increase the yield of beans.

The chief consideration, either on irrigated land or dry land, is good, thoro cultivation. Such cultivation should be given as soon after irrigation as possible to get onto the land, and on dry lands such cultivation should be given after rains as soon as it is safe to work the soil. Cultivation should not be given after the vines begin to run, which is about the blooming period, as previously mentioned.

TIRES AT WHOLESALE

We save you 30 per cent on your tires. We sell direct to you at wholesale prices. All tires guaranteed for 3,500 miles. Prices: 30x3, $8.80; 30x3½, $10.70; 32x3½, $12.60. Non skids, 50c each additional. All other sizes in proportion. We pay express charges if cash accompanies your order.

G. V. HEADINGTON,
P. O. Box 845 Denver, Colo.

GALLOWAY MASTERPIECE ENGINES

Are powerful, durable, reliable. Designed and constructed by master engine builders for hard, continuous, heavy-duty service. Use any fuel. Develop way above rated h. p. Easy to start—no cranking. Heavy weight, large bore, long stroke, low speed, wide bearings. All sizes at wholesale prices. From 1 3-4 to 16 h. p. portable, stationary, saw rigs, etc. Sold on five selling plans, cash or time.

WM. GALLOWAY COMPANY
Box 1825 Waterloo, Iowa

With the County Agriculturist

ITEMS OF INTEREST FROM THE FIRING LINE

WYOMING is making good progress in agriculture, chiefly by reason of effective work done by county agriculturists, of which there are now 10 serving over one-half of the state's area. This work is under the direction of Prof. R. S. Besse, State Leader of County Agents, who assumed charge of it in May, 1915, when there were only three agents engaged. Under his administration seven men have been added and each is doing his share in developing farming in a given locality along the right lines.

Prof. Besse came to Wyoming from Missouri. He was raised on a farm and was graduated from the College of Agriculture of the University of Missouri with the degree of bachelor of sciences, later completing his work for the master's degree. He has carried on investigations in rural co-operation, marketing, rural organization, farm management and economics, was secretary of the Missouri Farm Management association for three years, in which capacity he planned and reorganized individual farms and assisted with co-operative marketing for the association. Later he was appointed assistant state leader of county agents in Missouri, in charge of rural organization, serving in that capacity until appointed state leader for Wyoming.

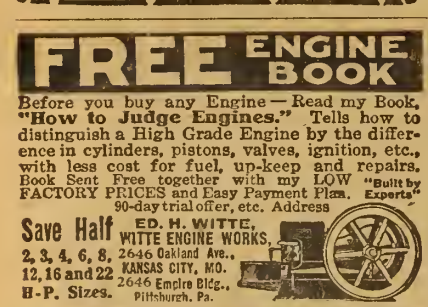
R. S. Besse, State Leader County Agents, Wyoming

Digging into the live problems of farm and ranch has been characteristic of the work under his leadership in Wyoming, with the result that it has grown on its own merits and has established itself by justifying its existence in service rendered to the farmer. The ten Wyoming agents are serving 50,000 square miles of territory and making their efforts count in spite of vast distances to cover.

Adams county, Colo., has started a plan of seed distribution that should work out to great advantage. It was explained in detail at the Farmers' Congress in Fort Collins by George R. Smith, the county agriculturist. The Adams County Federated Farm Association, comprising twenty-one local farmers' groups, procured a small appropriation from the county commissions, which was used in buying selected seed grain from the State Experiment Station. This was distributed among a few careful farmers, who agreed to give back to the Federation two bushels for every one that was advanced. This seed is then in turn distributed in a wider circle. Purity and germinating power are kept up by the farmers entrusted with the seed. In this way Adams county will, in a few years, have a dependable supply of homegrown seed grain.

Report from B. S. Tedmon, agriculturist for Platte county, Wyo., is to the effect that the farmers are taking an active interest in dairying. Seven purebred bulls were recently secured for farmers by the agriculturist, and a car of high grade Holstein cows has been brot into the county.

On one-eighth of an acre Nellie Chase, a high school girl of Ahsahka, Idaho, raised 60 bushels of potatoes last season, for which her cash returns were $82.74; cost of production was $8.54, showing a net profit on the investment of $74.24. She made an exhibit at the Spokane Interstate fair and won the blue ribbon for the best showing of Netted Gems, won first prize in the competition at the state fair in Boise over a hundred competitors from all parts of Idaho; first prize on best bushel and first on best children's exhibit at the Clearwater county fair. Miss Chase is sixteen years of age, and it was her first year as a member of the Potato club. In telling her story, she said: "I have learned much along agricultural lines, have made my spending money of this year, providing I wish to use it as such, and proved that girls are capable of doing what is generally considered boys' work, as well or better than the boys do it themselves; besides, the outdoor work is fun and very beneficial to one physically. My club work has enabled me to study all the harder in the schoolroom."



Denver The Live Stock Market

Denver is the Highest Market **Most of the Time** and the Best Market **All the Time** for Western Cattle and Sheep.

Time and again cattle have sold on the Denver market for higher prices than the same cattle would bring same days at the Missouri River.

The Hog and Sheep Departments are breaking all records.

Why don't you market your cattle and sheep at Denver, where they will bring you greatest net returns?

E. H. Thomas, who has served the San Luis valley as district agriculturist for several years, has been appointed agriculturist for Rio Grande county, with headquarters at Monte Vista. It has long been recognized that Mr. Thomas had too much territory to cover, but efforts of two or three of the counties to agree upon new lines of territory proved unsuccessful, and when Rio Grande county decided to establish the work for the county alone, Mr. Thomas was prevailed upon to accept the appointment. For the present the rest of the San Luis valley is without an agricultural agent, but doubtless the other counties will follow the lead of Rio Grande as rapidly as possible. Mr. Thomas has been very successful, in spite of the large territory that was given him. He will be able, under the new conditions, to give the problems of the farmers closer attention and the results will be more satisfactory to all concerned.

An Education in Beans, Potatoes and Corn

Continued from Page 21

Best ten ears white dent—J. C. Williams, Motor Route A, Colorado Springs.

Best ten ears calico dent—H. H. Burdick, Kendrick.

Best ten ears white flint—A. F. Cogswell, Calhan.

Corn—Irrigated

Best ten ears yellow dent—Henry Eichles, Buttes.

Pinto Beans

First on 50 pound sack—Miss Anna Williams, Motor Route A, Colorado Springs.

Second on 50 pound sack—E. E. Noe, Colorado City.

Potatoes

Early Ohio—C. L. Steppler, Monument, first; R. M. Bovard, Monument, second.

Late—Ohio—W. H. Hopper, Aastonville, first; H. E. Gudger, Eastonville, second.

White Pearl—C. L. Steppler, Monument, first; D. B. Campbell, Monument, second.

Red McClure—Kirk Bros., Eastonville, first; H. A. Gudger, Eastonville, second.

People's—Leland Barnes, Monument, first.

Russet Burbank—Kirk Bros., Eastonville, first; W. H. Hopper, Eastonville, second.

Improved White Elephant—H. D. Hackman, Colorado Springs, first.

Small Grains (Firsts)

Early oats—Kirk Bros., Eastonville.

Medium late oats—J. M. Pribble, Monument.

Winter wheat—W. H. Cooper, Kendrick.

Spring wheat—J. M. Bradshaw, Peyton.

Winter rye—Kirk Bros., Eastonville.

Bearded barley—Stout Bros., Husted.

Sudan grass—H. A. Gudger, Eastonville, first.

Turnips—Best five, H. D. Hackman, Colorado Springs.

Best bale oat hay—H. D. Hackman.

Best bale barley hay—H. D. Hackman.

An Opportunity Awaits You

IN THE

Fertile SAN LUIS VALLEY

In South Central Colorado

SERVED BY THE

DENVER & RIO GRANDE RAILROAD

This great mountain valley, lying at an altitude of 7,500 to 8,000 feet, was in geologic times an old lake bottom. The valley contains approximately two million acres of land and some of the oldest irrigation ditches in the state are found in this section. The water supply is obtained from several large rivers and thousands of artesian wells. Livestock is paramount, while remarkable crops of peas and barley give superior advantages for fattening sheep and hogs. Oats, barley, wheat, alfalfa, potatoes and vegetables do well.

Write for free copy of Agricultural Bulletin, giving detailed data on this fertile region.

FRANK A. WADLEIGH,
Passenger Traffic Manager,
Denver, Colo.

Live Items About Livestock

There has been but very little change in market prices of livestock during the past few weeks, and the indications are that prices will go but little if any lower, while there are good reasons to look for an advance. There is a material shortage in beef, pork and mutton animals thruout the country. The scarcity and high price of feed has caused many to dispose of a large part of their stock, much of it in an unfinished condition. Farmers will make no mistake in raising all the livestock that they can feed.

"There need be no fear of a drop in the prices of livestock for at least two years, and I predict even higher prices next year than those now prevailing," said Edward A. Cudahy, Jr., of the Cudahy Packing Co., in a recent address at the livestock show in Wichita, Kan. "The meat resources of the European countries at war are practically exhausted and even after the war ends, considerable time will be required for the belligerent nations to get on their feet. While the population of the United States has largely increased, the number of cattle and sheep have decreased and that of hogs has made only a slight increase."

Spokane Livestock Conference

The Inland Empire, comprising portions of Idaho, Washington and Oregon, is beginning to feel the need of more livestock. This is particularly true in the wheat-growing sections, where the one-crop idea has had the usual consequence of impairing soil fertility. At a conference held in Spokane late in February by representative farmers, stockmen, business men, and livestock experts from the government and the colleges, the whole problem was discussed and plans were made for putting the stock industry on a better basis.

Ex-Governor Ammons of Colorado was called to Spokane to advise with the Inland Empire people. As president of the National Western Stock Show and one of the founders of that show, his suggestions were of great value to the conference. He spoke on "Beef Production" at one meeting and at another took up "Western Problems," this subject being the principal address at the banquet that closed the three days' session. Briefly his suggestion was that all public lands be turned over to the states in which they are located, the revenue from the handling of same to be spent in road building. This idea met with a warm response, and the Spokane Chamber of Commerce, under whose auspices the conference was called, decided to have the address printed and circulated in pamphlet form.

One of the publicity measures discussed was that of sending a trainload of show stock from the Inland Empire to the livestock expositions and state and district fairs of the Middle West.

Transportation charges are in the way of proper development of stock breeding and general stock farming in the Northwest, and the conference decided to take up the matter with the railroads. The purpose is to ask the railroads to grant a half rate on purebred cattle of all sorts to stimulate the purchase of such stock by the farmers. As the railroads receive the ultimate benefit in larger traffic, it is believed they will look favorably on the proposition.

At the close of the conference Governor Ammons visited Umatilla County, Oregon, one of the greatest wheat-growing counties in the United States. This county has had in one season as high as 1 per cent of all the wheat grown in the country. Summer fallowing is practised by the wheat-growers with great success. They are realizing, however, that no country can succeed permanently on a cash crop basis, and more livestock, with consequent preservation of soil fertility, is their object.

Governor Ammons was pleased with his trip and with the splendid treatment given him by the people who arranged the conference.

Livestock Notes

At the Nebraska Holstein Breeders' Consignment Sale, South Omaha, Neb., Feb. 21, there was a large attendance of dairymen and farmers and the bidding was spirited from the start. It was a quality sale, the animals consigned being choice individuals and the success of the big undertaking reflected much credit on the manager, Dwight Williams, and the consignors who had co-operated with him. The top animal of the sale was the bull calf Rag Apple Korndyke Clyde, a son of Rag Apple Korndyke Boon and Lotta Clyde, an A. R. O. cow whose seven-day record is 33.31 lbs. of butter. The calf was consigned by Dr. B. B. Davis of Omaha, was nearly pure white and was almost a perfect type of the breed. He was bought by S. H. Wilson of Omaha for $1,000. Another choice bull from the Davis herd was sold to C. E. Pearce of Madison, Neb., for $800. The top female of the sale was the three-months-old heifer, Park Princess Beets Segis a daughter of Colone Beets Segis, who was exhibited in the ring, weighing 3,000 lbs. The calf went to E. H. Smith, Barnum, Minn., for $520. The yearling bull consigned by the University of Nebraska aroused much interest and was sold to H. C. Weinert, Preston, Neb., for $500. There were a number of other sales that ranged from $400 to $500. The eighty head consigned brought a total of $24,045, an average of $300.56. The consignors were satisfied and the purchasers were pleased to get choice individuals at prices which they could afford.

At the recent annual meeting of the board of directors of the National Western Livestock Show, the same officials were re-elected for the ensuing year—Hon. E. M. Ammons president, Henry Gebhard vice president, J. A. Shoemaker treasurer, and F. P. Johnson secretary and manager. The receipts of the January show were $45,000 and the expenses $46,000. It was the decision of the board that more substantial buildings are badly needed and that the show should be enlarged in many respects. A committee was appointed to raise an annual sum of $15,000 to enable the show to give larger premiums which would attract a still better class of exhibits and make the show even a greater success and self-supporting.

In writing to advertisers be sure to mention WESTERN FARM LIFE.

We are the largest producers of pure bred Hereford bulls in the United States. Our bulls are as well bred as the average that are registered and the prices are much lower.

The Tompkins Cattle Company
(Incorporated)
Breeders of Pure Bred Herefords
General Offices 418 McPhee Building
DENVER, COLORADO

Home of the Giants
100 Jacks and Jennets. We handle the big kind. Special attention to bone, foot and weight. All ages. Prices from $300 up. All registered, all guaranteed, as represented.
BRADLEY BROS., Warrensburg, Mo.
65 Miles East of Kansas City. Main line Missouri Pacific.

Stallions and Jacks
One 2-year-old registered Jack and two yearling Jacks; all big, heavy-boned. One 2-year-old registered Percheron stallion. One Belgian stallion, grade. One standard-bred stallion. Colorado raised and acclimated
JOHN E. BURNS, Louisville, Colo.

Shorthorn and Polled Durham Cattle
Valentine's Last, X12316; 452005 at head of beef herd. Claywood White, 427350 at head of milk type.
STATE INDUSTRIAL SCHOOL
Golden, Colorado

Home-Bred Draft Stallions
Your choice $500, with the exception of two. Also mares for sale.
A. LATIMER WILSON, Creston, Ia.

JACK MEN, LISTEN
I have the largest 6-year-old jack west of the Missouri River for sale. Other bargains in Mammoth jacks and jennets.
Inspection Invited Satisfaction Guaranteed
W. H. WHEELER, Garden City, Kan.

BLUE RIBBON HERD
DUROC JERSEY HOGS
Everything Registered
Stock for Sale
C. F. BURKE, Rocky Ford, Colo.

HOLSTEIN CATTLE
PERCHERON HORSES
THE
Jarosa Ranch
LONGMONT, COLO.
Offer a large selection of Holstein Cattle—both sexes—young or matured stock—registered or grades—for sale. Also pure-bred Percheron Horses
Buy WESTERN ACCLIMATED STOCK AT HOME
SATISFACTION GUARANTEED
Write for Description Today
Howard M. Jay, Owner R. F. D. No. 2, Box 71

TO HORSEMEN
We are offering for sale the following pure-bred and imported Percherons, all in prime condition:
Two imported dapple gray mares, 8 years old.
One imported dark brown mare, coming 4 years.
One jet black stallion (son of Champagne), coming 2 years.
This stock is equal to the best in Colorado.
The Flowerland Farm, Federal Boulevard, north of Loretto Academy, near Denver, Colo. Phone Main 1851, or write Loretto Postoffice, Colo.

A GUERNSEY BULL
used in a grade herd in Ohio *sired daughters* that produced *50% more milk* and *70% more butter fat as 2 year olds* than did their dams when mature.
GUERNSEY MILK contains 5% Butter Fat
Write for our beautiful free booklets about Guernseys
THE AMERICAN GUERNSEY CATTLE CLUB
BOX PX PETERBORO, N. H.

High-class Jerseys. Count Majesty and Majesty Oxford combination herd bulls. Both are great dairy bulls. Have a great August calf by Count Majesty ready for sale. He is fine. Have an imported in dam calf by a son of "Oxford You'll Do" that is a regular "peacock." Also Duroc hogs of best breeding. All stock registered.
A. M. McCLENAHAN, Greeley, Colo.

REGISTERED DAIRY BULLS
Holstein, Jersey and Guernsey
Bred by the Agricultural College. Most of the dams in the advanced registry
Animal Husbandry Dept., COLORADO AGRICULTURAL COLLEGE, Ft. Collins, Colo.

Iowa State Live Stock Insurance Company
Home Office, Des Moines, Iowa
Colorado Office, No. 314 Tabor Opera House Building, Denver.
We write a blanket policy and also a special policy on registered stock.
AGENTS WANTED IN COLORADO

PERCHERONS—BELGIANS—SHIRES
Imported and home-grown 4 and 5 yr. old stallions, ton and heavier; 3 yr. olds, 2 yr. olds, yearlings. Produce of 62 Imported mares and noted prize-winning Imported sires weighing 2235 lbs. and 2430 lbs. each. Ton stallions at farmers' prices. Fred Chandler, R. 7, Chariton, Ia. Direct from Denver.

IF INTERESTED IN
Polled Durhams
COME TO
SOUTH OMAHA, NEB., March 29
IF YOU WANT
Shorthorns
COME TO
SOUTH OMAHA, NEB., March 30
Write for illustrated catalog of the breed you are interested in.
Sixty head of Polled Durhams the first day. Seventy head of Shorthorns the second day.
For illustrated catalog, address:
H. C. McKELVIE, Mgr., Lincoln, Neb.

DR. A. A. HERMANN
Veterinarian,
Littleton, Colo., Phone 52W
Specialty, Diseases of Cattle.
New Blackleg Serum. Immunizes perfectly calves of any age by only one injection. Descriptive literature furnished.

El Paso Herd Duroc Jerseys
Took more first premiums at Denver Stock Show with four under 6 mos. pigs than any competitor, on full herds. The reason is plain. Fall pigs sired by Illustrators Chief, the sire of champions in first litter.
J. W. BRAUER
22 Maple St. Colorado Springs, Colo.

BARGAINS Percherons, Belgians, Shire, Clyde, Suffolk, Hackney, Great Coach Stallions, Good Jacks. Time given purchasers.
R. L. LITTLE
Good Block Des Moines, Iowa

$1150 F. o. b. Racine
Mitchell Junior—a 40 h. p. Six
120-inch Wheelbase

Mitchell SIXES

$1460 F. o. b. Racine
7-Passenger—48-Horsepower
127-inch Wheelbase

A 40-Year Car

Yet Not Strong Enough

A New Standard

This year, for the first time, we announce in the Mitchell 100 per cent over-strength. That is, twice the needed strength in every vital part.

Under our former standards the margin of safety was figured at 50 per cent. And that was considered extreme.

Two Mitchell cars, built under old standards, have already exceeded 200,000 miles each, or 40 years of ordinary service. Seven cars that we know of have averaged over 175,000 miles each.

Then why this doubled standard?

For a Lifetime Car

The object is a lifetime car.

We feel that the Mitchell is standardized. Neither type nor style is likely to greatly change. So our entire plant has been equipped to produce this one type economically.

John W. Bate, our efficiency engineer, spent a year in Europe just before the war. He consulted with engineers there. They were aiming at double strength, based on European roads.

Since then, part by part, he has brought the Mitchell to a like standard, based on American roads.

What About Lightness?

For years the talk has been lightness. That is a good principle but a bad fetish. We believe that it went too far.

With present steel prices, a too-light car means a big saving. So there is reason to defend it.

John W. Bate has not sacrificed lightness where other methods could prevent it. Steering parts, axles, bearings etc., are made oversize. But most of this 100 per cent over-strength comes through costly steel.

Over 440 parts in the Mitchell are now made of toughened steel. All parts which get a major strain are made of Chrome-Vanadium. We pay for steel used in the Mitchell as high as 15 cents per pound.

How Do We Know?

Mr. Bate has worn out fifty cars in proving needed strength. He has tests for each important part to prove the double strength.

Every gear is tested. One gear in each hundred is crushed, to prove that the teeth will stand 50,000 pounds.

Steel is made to formula. Then it is analyzed. And every part made from it must pass tests for strength.

We do not know, and may never know, how long a Mitchell car will last. But we do know its comparative endurance.

TWO SIZES

Mitchell—a roomy, 7-passenger Six, with 127-inch wheelbase. A high-speed, economical, 48-horsepower motor. Disappearing extra seats and 31 extra features included.
Price $1460, f. o. b. Racine.

Mitchell Junior—a 5-passenger Six on similar lines, with 120-inch wheelbase. A 40-horsepower motor—¼-inch smaller bore than larger Mitchell.
Price $1150, f. o. b. Racine.

Also all styles of enclosed and convertible bodies. Also demountable tops.

And we know that parts where weakness generally shows seem all-enduring in Mitchells. For instance, springs. Bate cantilever springs, with this double strength, have been used two years in Mitchells. And not one leaf of one spring yet has broken.

Other Mitchell Extras

The Mitchell has now 31 extra features which nearly all cars omit. They are features which cost us, on this year's output, about $4,000,000.

This year it has many added luxuries. We are saving vast sums in our new body plant. Out of that saving we have added 24 per cent to the cost of finish, upholstery and trimming. The latest Mitchells are models of luxury.

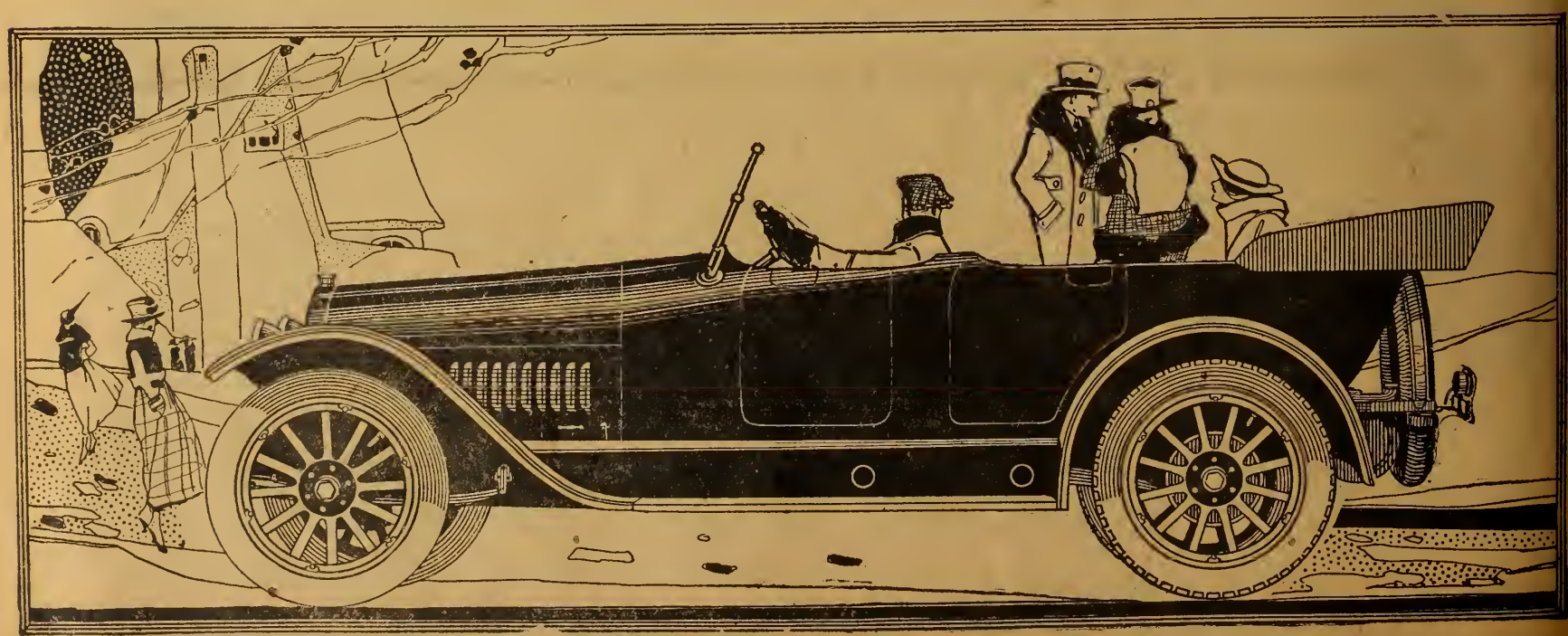
All these extras, including over-strength, are paid for by factory savings. They result from the fact that John W. Bate's methods have cut our factory costs in two. They represent, in extra value, what other methods waste.

Go see these extras. Learn what they mean to you. When you buy a car for years to come you will want the car that gives them.

Also An $1150 Six

Note that this year—to meet a wide demand—we bring out Mitchell Junior. A slightly smaller motor—a little shorter car. And a lower price than the 7-passenger Mitchell. But more powerful and roomy than most 5-passenger cars. So men can get the Mitchell now in either size they want.

MITCHELL MOTORS COMPANY, Inc.
Racine, Wis., U. S. A.



WESTERN Farm Life

OFFICERS OF THE FEDERAL LAND BANK OF WICHITA

Six of this group are officers of the Federal Land Bank of Wichita, which institution has charge of farm loans for the Ninth district, comprising the states of Kansas, Oklahoma, Colorado and New Mexico. The man in the center of the top row is Mr. Charles Lobdell, a member of the Federal Farm Loan Board at Washington, who went to Wichita to help organize the district bank.

At the left, top row, is D. F. Callahan, Kingman, Kans., President; at right, T. A. Hubbard, Rome, Kans., Director. Bottom row, reading from left to right: W. P. Z. German, Registrar and Attorney, Muskogee, Okla.; Miles Lasater, Vice President, Oklahoma City; T. J. Guilfoil, Secretary, Albuquerque, N. M.; Ralph Voorhees, Treasurer, Denver, Colo.

Denver, Colorado
April 1, 1917

Burns Kerosene "ALLWORK" TRACTOR

Successful at all large Tractor Demonstrations last year—Two years' success with a host of satisfied and enthusiastic users

Largest 4-Cylinder Engine On Any 3-Plow Tractor

4 cylinders, 5-in. bore, 6-in. stroke, 750 r.p.m. Develops 28 h.p. at belt and 14 h. p. at draw-bar. Two-speed transmission working in oil; automobile type front axle; self-oiling steel gears, dust-protected; radiator and fan that cools absolately. Turns short in 12-foot radius.

Weighs 5000 lbs. and develops 3000 lbs. draw-bar pull and 4000 lbs. on low gear. Pulls 3 plows under adverse conditions—4 plows under favorable conditions—burns kerosene. Runs 18-in. Ensilage Cutter and 28-in. Separator. Pulls an 8-foot Road Grader.

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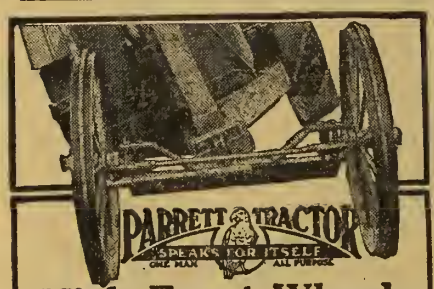

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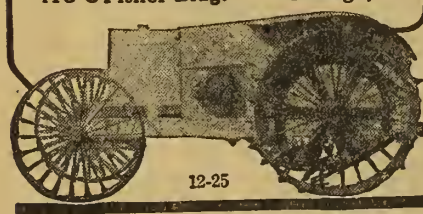

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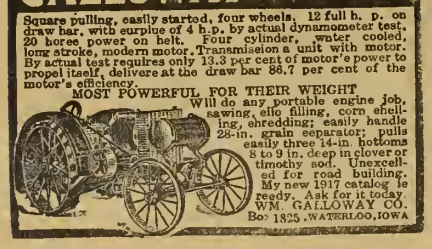

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Larger Litters

E. W. Ferguson, Jr.

In a recent issue we had editorial comment on the desirability of securing large litters of pigs, and mention was made of the fact that a certain breeder was about to change from Poland Chinas to Durocs on account of the average litter of the former being so small. The fact is, that as the different breeds are now handled, under average conditions the Poland China does produce much smaller litters than the Durocs, Chesters or the Berks, yet I have a friend in southeastern Nebraska in the center of the true corn belt, who has had an average of better than seven pigs per litter from Polands for many years; this man is a wonderfully successful hog man.

I have grade Chester whites that are generally good producers, not quite as high as Durocs, however. The hogs I have now are all from two sows that were born in the spring of 1913, and we called them Spot and Ten. As yearlings, Spot raised 8 and Ten 9 pigs. That fall Spot raised 7 and Ten 10, and when two years old Spot 11 and Ten 8.

The spring of 1914 these two sows raised 9 sow pigs, one of which was killed by accident when she was about 10 months old. The other eight gilts saved litters of 4, 6, 6, 6, 6, 7, 7 and 9, only 2 dead pigs in the bunch. The average for the 14 litters of this good old mother stock is a trifle more than 7, and 10 of the 14 litters were from gilts. The average from second and third litters was 9.

In the spring of 1914 I had four other sows to pig and they brought me a grand total of 9 pigs. Three of the best of them were bred back and brought 17 in the fall and only one got with pig the spring of 1915, and she did not save any pigs. These unprofitable sows had four gilts among their nine pigs and then in the spring of 1915 I saved a total of eight pigs from these four. They had an average of about four pigs, but they were so lacking in vitality that they lived but a few days.

Is it much wonder that I tied my hog destiny to old Spot and Ten?

I never save fall-raised pigs for brood sows, for several reasons, which will appear later, but this spring I started with about 30 sows of the Spot and Ten stock and have had excellent results.

An experiment was made in Indiana a few years ago, by which the average of the litters was raised from little more than four to almost seven in just a few years, and that only by selection.

It is always well to inquire when buying a boar as to the number of pigs raised in his litter. Never under any circumstances buy a boar from a litter of less than five, or even under seven to ten, if your sows are poor producers.

My own experience, and all the data I have at hand, prove that selection may almost run out the hogs or else in a few years produce as large litters as sows can well suckle.

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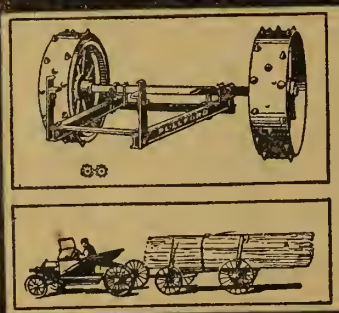

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Expert Explains Varietal Differences in Alfalfa

SUGGESTIONS FOR SEEDING AND OTHER SEASONAL HINTS

PHILO K. BLINN

Alfalfa Specialist Colorado Experiment Station

HE question is frequently asked, "What is the best alfalfa for dry land?" or "What strain of alfalfa best suited to the irrigated secns?" We might answer these eries in a general way by saying t most any of the ordinary strains alfalfa will succeed on dry land if re is moisture enough, and the ne strains will also succeed well ler irrigation if too much water is applied; it is more a question of ditions and cultural care than it is variety to be sown.

'o the casual observer there would very little difference between the kestan, Grimm's, Baltic, or common lfa; they all have very much the ne appearance; this is attested to a common conviction among farmthat "alfalfa is alfalfa."

Ne of the unfortunate features of proposition is that the distinction ween commercial varieties of ala is not more marked. One reason he lack of any systematic effort in d selection of alfalfa, and there is btless much indifference and careness in handling the different ins of alfalfa seed. There is dly a commercial variety of alfalfa t is at all uniform. It is usually sible to select a great number of trasting types of plants; in fact, re is often as great a contrast been individual plants of the same in as there is difference in plants different varieties.

omparative testing and selecting to rove alfalfa has demonstrated the ibility of developing different types alfalfa with distinct traits and lities. The following points have n found in some lines of selection lfalfa:

. Hardiness and resistance to late ing frosts.

. Disease resistance to some of fungus and facterial troubles in lfa.

. Finer stem growth, which makes ter and more leafy hay.

. Types better suited to different conditions.

Difference Between Grimm and Common Alfalfa

5. Earlier and more uniform blooming habits, which will be more valuable for honey production.

6. Heavier seed production.

Some of these traits are found in some strains of alfalfa, but there are no special selected strains of alfalfa on the market at the present time. Developments are in progress along this line, and it is probable that within a year or two some distinctly improved strains of alfalfa will be on the market.

Distinct Types of Alfalfa

There are two very distinct types of alfalfa which is very important to consider when alfalfa seed is selected to seed a field.

SOUTHERN TYPE: The Psruvian alfalfa, Arabian alfalfa, and alfalfa from Italy and northern Africa, are all of a very similar type, characterized by a compact upright growing crown, with the budding area of the crown very near the surface of the ground. The crown sends up comparatively few stems which are rather inclined to be coarse, tall growing, with large leaves, of light green color. The root development is usually a straight tap root with few lateral branches near the surface. These strains of alfalfa are non-hardy in Colorado. This seems to be partly due to the exposed buds on the crown shoots, which freeze and dry out during the winter. These strains also seem very susceptible to late spring frosts, and the attacks of fungus troubles on the leaves.

NORTHERN TYPES: The Grimm's, Baltic, Blackhills alfalfa, and some strains of Turkestan alfalfa are all characteristic of the Northern type of alfalfa, distinguished by a more spreading crown, that puts forth crown shoots below the surface of the ground. Thus, many of the buds that form the stems are protected by soil from winter freezing and drying out. The crown sends out many stems which makes a more branched, leafy plant.

The leaves of some of the Northern types are dark green and well covered with plant hairs which gives the leaves a gray-green color. These types seem more resistant to spring frosts, and the attacks of fungus diseases. The spreading tendency of the plant and crown is also manifest in the root development. These strains have the straight tap root, but also many lateral roots near the surface.

THE INTERMEDIATE TYPE: Our common alfalfa undoubtedly came from the southern type. It was first grown in California from seed shipped from South America or Mexico. As it was grown further north it gradually became more acclimated, the non-hardy types dying out. There are so many traits in our common alfalfa that are so much like the Southern type that it seems evident that the Northern types would be preferred to sow rather than to seed with a strain that would gradually die out as it does in the fields of common alfalfa.

What Variety to Plant

Summing up the proposition as to what variety to plant, there is little doubt but that the Grimm or Baltic alfalfa would be the most desirable to sow on most any of our western soil conditions, if the genuine seed can be procured. The second choice would be Montana-grown, or any of the heavy stooling strains. The common alfalfa is good, especially if the seed is from an old field where winter killing has eliminated the non-hardy types.

At present it seems to be a question more of what chance there is to get alfalfa seed of good germinating pure stock than it is of variety.

Important Points In Seeding

1. Seed early, first of April, if moisture is reasonably sure. Frost will not kill little alfalfa seedlings, if there is moisture in the soil.

2. Moisture is the most necessary element for success in starting alfalfa. There should be moisture in the subsoil. Under some ditches it is not advisable to sow the alfalfa until the run of water in the ditch is well assured.

3. Seed alfalfa on well settled firm

Continued on Page 22

The Illustrations

Upper illustration shows a contrast between a Grimm crown five years old and a common alfalfa crown same age, the Grimm being on the left.

Illustration on the left at bottom of page shows a contrast between the Northern and Southern type of alfalfa, the Northern showing the strong, bushy growth.

On the right at bottom of page is a young Grimm alfalfa plant three months from seed, showing strong underground shoots.

(Photos furnished by Colorado State Experiment Station.)

Build That Silo and Insure Next Winter's Income

PLAN YOUR CROPS NOW TO INCLUDE PLENTY OF ENSILAGE

BUILD that silo; plan your crops now, so that you will be able to fill the silo next fall. You can't fill the silo till you build it, and now is the time to decide on type of silo that best suits your needs, so that it can be put up—or down—during the summer. Every farmer who feeds dairy cows or beef stuff, and every breeder of cattle needs succulent feed in winter. On the dry land farm the silo is more necessary than fire insurance. It is needed in summer, to carry the dairy herd thru the season of short pasture; it is absolutely necessary in winter if the farmer wants to sell cream. The dry land farmer needs two or more silos. He should have a reserve supply of succulent feed for the year of short rainfall when even forage crops yield scantily.

It is not a question of cost. The plains farmer can build a pit silo. This type of silo serves every purpose of the high silo, has some advantages over it, and suffers from a few disadvantages, but it fills the bill. Pit silos have been built for $15 or $20, exclusive of labor. Fifty to sixty dollars will build a good one that will store plenty of feed for a small herd.

Ask the Extension department of Colorado Agricultural college to send you bulletin No. 107 on "Silos and Silage," by R. W. Clark and Charles I. Bray. This gives full information about the crops to use for ensilage and furnishes explicit directions regarding the building of pit silos.

Advantages of Ensilage

Silage is the best and cheapest form in which succulent feed can be provided for winter use.

An acre of corn can be placed in the silo at a cost not exceeding that of shocking, husking, grinding and shredding.

Crops can be put into the silo during weather that could not be utilized in making hay or curing fodder; in some localities this is an important consideration.

A given amount of corn in the form of silage will produce more milk than the same amount when shocked and dried.

There is less waste in feeding silage than in feeding fodder. Good silage properly fed is all consumed.

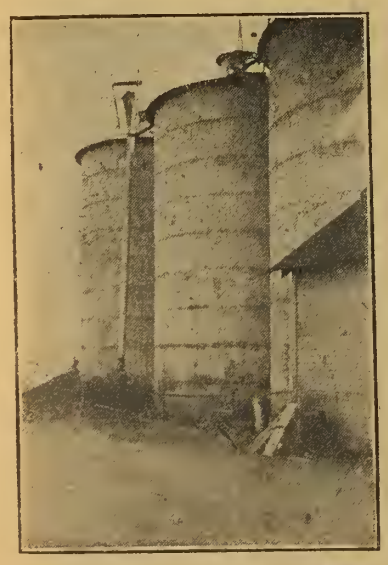
Silage is very palatable.

Silage, like other succulent feeds, has a beneficial effect upon the digestive organs.

More stock can be kept on a given area of land when silage is the basis of the ration.

On account of the smaller cost for labor, silage can be used for supplementing pastures more economically than can soiling crops, unless only a small amount of supplementary feed is required.

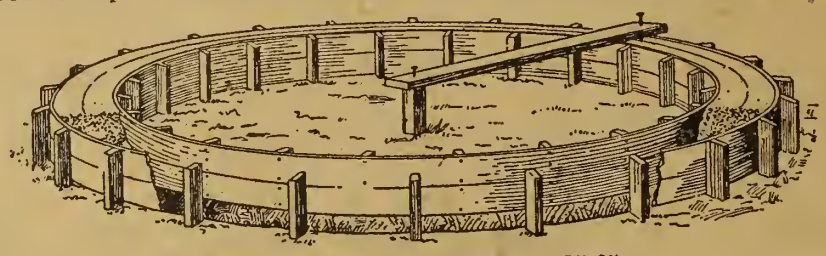
Converting the corn crop into silage



Concrete Silos, H. D. Parker Ranch, Weld County, Colo.

clears the land and leaves it ready for another crop sooner than if corn is shocked and husked.

Because of these advantages of silage it is the general opinion among dairy farmers who have built silos that the use of silos has increased milk production per cow and has increased the profits per acre.—T. E. Woodward, Dairy Division, U. S. Department of Agriculture.



Method of Construoting Conorete Curb for Pit Silo

TABLE NO. 1—Relation of Size of Silo to Length of Feeding Period and Size of Herd

Number of cows in herd	Feed for 180 Days			Feed for 240 Days		
	Estimated tonnage of silage consumed, tons	Size of Silo		Estimated tonnage of silage consumed, tons	Size of Silo	
		Diameter, feet	Height, feet		Diameter, feet	Height, feet
10	36	10	25	48	10	31
12	43	10	28	57	10	35
15	54	11	29	72	11	36
20	72	12	32	96	12	39
25	90	13	33	120	13	40
30	108	14	34	144	15	37
35	126	15	34	168	16	38
40	144	16	35	192	17	39
45	162	16	37	216	18	39
50	180	17	37	240	19	39

The following table gives further figures regarding the capacity of silos of different sizes:

TABLE No. 2—Capacity of Silos of Varying Sizes

Depth of Silage, Feet	Inside Diameter of Silo in Feet				
	10	12	14	16	18
	Tons	Tons	Tons	Tons	Tons
25	36	52	68	96	122
28	40	61	81	108	137
30	44	68	90	115	150
32	50	72	95	126	162
34	53	77	108	142	171
36	57	82	114	158	194

Crops For the Silo

Corn is used more extensively for filling silos than any other crop and gives the best results where it can be grown most successfully, but other crops, as kafir corn, alfalfa, clover, peas and sweet sorghum can be used for this purpose. Corn for the silo should not be harvested until the kernel has first reached the dent condition. More food per acre will be secured if the corn is harvested at this stage than if it is harvested earlier. The food nutrients in stalk, leaf and kernel have reached their development. Harvesting should not be delayed to cause a drying out of the plant or loss of the leaves. The more moisture there is in the plant when harvested, the more valuable will be the resulting silage. If the corn becomes frosted it should be put into the silo immediately, for the longer it stands after frosting the greater will be the loss of food nutrients.

Alfalfa, clover and peas should be harvested for the silo when mature enough to make hay. If the haying season is very wet these crops can be more profitably put into the silo than made into hay.

Silage made of corn, kafir corn and sweet sorghum is highly suitable for cattle and sheep and can be fed to horses in limited quantities. Silage from these crops, if properly made, will keep good for years and can be fed at all seasons.

Silage made of clover, alfalfa and peas can be fed to all classes of livestock. This kind of silage has not as good keeping qualities as corn silage. It can be carried over from the first to the second year in good condition, but should be fed before the second summer begins. Age and hot weather together cause it to discolor and to become strong in flavor and more or less unpalatable.

Silage is most valuable as a supplementary food when the pastures are short during the grazing season. It should never constitute the whole of the forage ration, but should be fed supplementary to pasture or some kind of roughage.—R. W. Clark, Extension Specialist in Animal Husbandry, Colorado Agricultural College.

Feeding Value of Ensilage

Feeding value of silage:

The chemical composition and nutritive value of silage will vary according to the crop from which it is made, the degree of maturity of the crop and other factors. Following are figures from Henry's "Feeds and Feeding," showing the average amount of digestible nutrients in 100 pounds of silage and other succulent feeds.

Green fodder corn: 20.7 pounds dry matter; 1.0 pounds protein; 12.2 pounds carbohydrates; 0.4 pounds fat.

Corn silage: 26.4 pounds dry matter; 1.4 pounds protein; 14.2 pounds carbohydrates; .7 pounds fat.

Green sorghum fodder: 20.6 pounds dry matter; .6 pounds protein; 11.6 pounds carbohydrates; .3 pounds fat.

Sorghum silage: 23.9 pounds dry matter; .1 pounds protein; 13.5 pounds carbohydrates; .2 pounds fat.

Pasture grass: 20.0 pounds dry matter; 2.5 pounds protein; 10.1 pounds carbohydrates; .5 pounds fat.

Silo Capacity Figures

The two tables shown above are taken from a Missouri State Experiment Station bulletin. The first will show the relation of the size of the silo to length of feeding period and number of stock fed, the second the capacity of silos of varying diameter. Table 1 is based on the assumption that a dairy cow and a mature beef animal will eat about the same amount of silage in a day.

How to Build a Pit Silo

CHARLES I. BRAY

Pit silos are cheaply constructed and require little attention after building. They can be filled with small machinery, the ensilage never freezes in them, and if well constructed they are nearer everlasting than any other silo. The greatest objection to the pit silo is the extra labor required in removing the silage. Other objections of minor importance are: The liability of stock falling in; danger of carbon dioxide gas forming; and the spoiling of the silage in wet seasons from seepage.

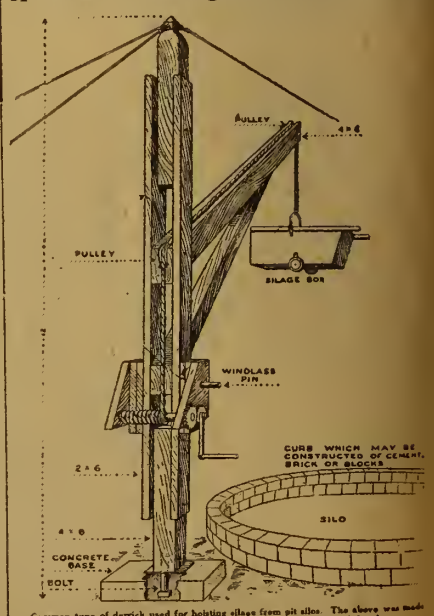
About twice as much time is required to remove silage from a pit silo as from an ordinary silo, but counting time at 20 cents an hour, the extra cost is only about $11 or $12 per year for a 100-ton silo, or less than the increased interest on a $400 silo. This estimate of the increased expense in removing the ensilage is also offset by the fact that much cheaper machinery can be used in filling the pit silo.

To prevent stock from falling into the pit silo, the silo walls are usually built up about four or five feet above ground. Suffocation from carbonic acid gas in pit silos, while possible, has, perhaps, been over-emphasized. The formation of gas in quantities large enough to be dangerous ceases in about ten days after filling the silo. A few bundles of fodder dropped in will stir up the air so as to render it safe to enter the silo. Gas can be detected by lowering a lighted lantern into the pit. If gas is present the light will go out. Where filling has been only partly completed and then discontinued for a few days, filling should be started again for five or ten minutes before any one goes into the silo. The pit silo should never be built where the water level is not some ten feet or more below the desired depth of the silo. This is one reason why the pit silo is more popular in the semi-arid west than elsewhere. There are occasional rainy seasons when seepage water may give trouble. Thus far, however, we have not heard of much silage being destroyed in this way.

Laying Out the Circle

To build a pit silo, first lay out a circle on the ground the desired size of the silo, and outside of this circle dig a trench, which should be about two feet deep and about eight inches wide. The inside wall of the trench should be smooth and perpendicular. Fill the trench with a concrete mixture of one part cement and five parts sand or gravel, well mixed and very wet. Old iron rods or old barbed wire can be used for reinforcing to keep the rim from cracking. When this concrete rim has set, go inside and excavate to a depth of about six feet below the rim. Keep the walls plumb and smooth so that it will not require too much mortar for plastering.

A good way to keep the walls smooth is to drill a perpendicular hole in the center of the silo and set a gas pipe in this hole to use as a pivot. If a long gas pipe is not at hand, a shorter bar may be used, if care is taken to keep it plumb. Bore a hole near the end of a 2 x 4 scantling and place it over



Common type of derrick used for hoisting silage from pit silos. The above was made from a drawing furnished by J. W. Adams, Cheyenne Wells, Colorado.

the gas pipe. Saw the other end off so its length from the gas pipe will be the same as the radius of your silo. Bolt some heavy blade on this end.

Continued on Page 17

Sudan Grass, Most Dependable Dry Farming Crop

PREPARE GROUND NOW AND PLANT WHEN FROST DANGER IS PAST

ALVIN KEZER

SUDAN GRASS gets its name from the fact that the wild plant from which the present crop was grown was discovered by agricultural explorers of the United States Department of Agriculture in the Sudan district of central Africa. The first importations of seed were made by the bureau of plant industry in 1909. The first trials of the crop in Colorado were made in 1911, altho no consistent trial was made in that year. We have had consistent trials every year since beginning with 1912.

In searching for this crop the agricultural explorers had two things in mind: (1) The finding of new crops which would be valuable under our conditions; (2) They were specifically hunting for a crop which might have all the good points of Johnson grass and which would be devoid of the perennial character and the habit of propogating itself by root stalks, which makes Johnson grass a pernicious pest in some districts of the south.

Sudan grass resembles Johnson grass considerably, but unlike Johnson grass, Sudan grass is an annual practically everywhere in the United States. As a consequence, there is no danger of its becoming a pest. The seed can readily be distinguished from Johnson grass, altho there is a considerable resemblance.

Sudan grass belongs to the same family of plants as the sorghums. It is very closely related to our common cane sorghums and crosses readily with them. In habit of growth, it is finer stemmed than the sorghums and consequently makes a hay which is easier to handle; being finer there is usually less waste in feeding because stock like the finer hay better than the coarser cane hay.

Requires Warm Weather

On our dry lands, Sudan grass will yield from 1½ tons to 4 tons per acre, depending upon soils and moisture supply. In those sections where it is adapted it will do well under irrigation for an annual hay crop. Under irrigation it will yield from 3 to 7 or 8 tons per acre, depending upon the length of the season and the richness of the soil. In the Arkansas valley the season is long enough to permit two cuttings. Sudan grass is adapted for an annual hay crop over practically all of our plains dry land regions. Since it is a sorghum it requires warm weather for its best growth. Cool nights shorten the growth and retard development. As a consequence it is not generally adapted to altitudes above 5,000 feet, altho in favored localities it is being grown as high as 7,000 feet, and in a few instances at higher altitudes. Seed cannot be matured in those altitudes. The seed must be brot each year from regions having a longer growing period.

Dry Land Sudan Grass

Sudan grass is one of the most valuable, if not the most valuable hay crop which has ever been introduced upon the dry lands of Colorado. In feeding value it lies somewhere between alfalfa and sorghum cane. It is richer in protein than the sorghum cane, and is a great deal richer in carbo-hydrates than alfalfa. In some instances Sudan grass is being used for pasture. This is a practice which is fraught with some danger. Sudan grass is a sorghum and has the same poisonous principle which makes it dangerous to pasture sorghum of any kind in dry land regions. While it has this same poisonous principle it is not present in as large quantities in Sudan grass as in other sorghums. In a few instances stock have been poisoned when pastured upon Sudan grass. This is mentioned at this point because there is a real danger in pasturing stock upon it. The danger, however, is very much less than with any of the sorghums, and a great many farmers have successfully pastured the crop without stock losses. The most dangerous period of Sudan grass for pasture is when the crop has been stunted from a long drouth period. At such times greater care in pasturing than usual should be exercised, if the crop is pastured at all during that time.

Sudan grass hay is adapted for feeding all kinds of live stock, with the exception of hogs. Hogs will eat a limited quantity, but Sudan grass is not well adapted for a hog hay. It does make good hog pasture, however. Sudan grass hay makes a good hay for work horses, and a good hay for any kind of live stock. It must be remembered, however, that it is a dry feed and will not take the place of silage in the feeding of dairy animals.

Sudan grass is a relatively small seeded crop. As a consequence the soil must be better prepared than would ordinarily be the case for corn or wheat, as a better seed bed must be prepared to insure germination. The seed bed may be prepared by plowing. Preferably fall plowing should be used except in regions where fall plowed land blows seriously. In that case, the land may be disked immedately after harvest and fall listed. The middles may be broken out in the spring and the surface made level by disking and harrowing. Where spring plowing is done, it should be as early in the spring as possible, so as to permit nature to do proper compacting and catch moisture for storage which the crop will use later on. Land for Sudan grass need not be plowed if it was well plowed the previous year for corn, beans, or other cultivated crops. If the land was very well plowed for wheat the previous year, a good seed bed may be prepared by fall disking to kill weeds and ease in catching moisture, and then spring disked in order to prepare a seed bed in the spring. On the dry lands the seed bed should always be prepared quite a little time in advance of planting. This is more especially true of plowing, but holds for other types of preparation.

In Rows for Dry Land

Dry land Sudan grass should always be planted in rows. The rows may be from 20 inches to 3½ feet apart, depending upon dry land conditions. This will permit cultivation of the intervening spaces between rows, and will produce a larger yield than broadcasting, with the use of less seed. The crop should always be drilled in. A grain drill may be used by stopping up the requisite number of holes in the drill to produce the distance desired between rows.

Since Sudan grass is a small seeded crop, the amount of seed required is relatively small. Three pounds per acre in 3 ft. rows, or from 5 to 6 pounds per acre in 20 to 24 in. rows, will be found sufficient under most dry land conditions. Under irrigated conditions the crop may be drilled with the ordinary grain drill, requiring from 6 to 10 pounds per acre to get the requisite amount of seed onto the land. The seeds are small and should not

Continued on Page 6

Corn and the Sorghums Our Late Spring Crops

DEEP PLOWING INCREASED A YIELD THIRTY-SIX BUSHELS

E. R. PARSONS

IF we judge by the acreage planted every year, the most important of our late crops is corn. Corn for seed, corn for grain, and corn for ensilage are all paying propositions.

Years ago we were told that our territory was not a corn country and never could be. We maintained that the raising of corn was a question of adaptation and the correct methods, and we raised many a crop of 40 to 50 bushels with deep plowing, and without fertilizing. At this date such crops are common even at high altitudes.

The best crop of corn in the West the past year was raised by a boy in North Dakota close to the Canada line, 103⅓ bushels of mature corn to the acre, vouched for by the Agricultural college. The boy's name is Arthur Granlund of De Lamere. He plowed 12 inches deep in 1915 and again 8 inches deep in the spring of 1916, before planting. The most illuminating fact in this corn contest was that the next competitor to Granlund raised only 67 bushels, and plowed 6 inches, and since the cultivation and fertilizing in both cases were about the same, the difference, 36⅓ bushels, must be credited to the DEEPER PLOWING.

The extra depth of plowing would not be worth more in labor than $2.50 an acre, therefore in this case we have 36⅓ bushels of corn for $2.50.

Deep Plowing for Corn

Deep plowing early in the spring as soon as the frost is out of the ground is also good for corn; but deep plowing for immediate planting is something we have never recommended.

The ideal stand for corn on the dry farm is one plant to the hill twenty inches apart in the row, and the rows the usual width. In order to secure that it is necessary to obtain a seed corn that will germinate as near 100% as possible, and then arrange the corn planter to drop only one in the hill. This implement should be carefully adjusted and tried out before using in the field.

When the seed does not germinate efficiently it is safer to plant two in a hill, and thin down to one after the sprouts come thru. Listing corn across deep fall plowing always gives good results, but the old practice of listing the seed in the hard ground without previous plowing is seldom good for more than 10 to 15 bushels per acre.

That which is seeded from the 15th to the 25th of May will usually outyield later plantings. The best average depth to plant the grain is about 2 inches, but in dry weather to secure germination it may be planted 4 inches or more. When there is no rain in sight and the seed bed is drying out the corn should be planted deeply with the lister, which is set so as to place the seed in the moist earth at depth leaving the furrows to be filled later by the cultivator when the plants are a foot or so high. In the absence of a lister the rows may be furrowed out with the plow, and the planting done in the wet soil at the bottom of the furrow. If the plowing has been deep there is no trouble in doing this, and crops may be secured even when the spring precipitation fails to materialize; but if the plowing has been shallow, and there is hardpan at 6 inches, this method cannot be worked so successfully.

When raising corn for ensilage the planting may be much thicker, two or three to the hill if the farmer desires succulent fodder with thin stalks.

Experience With Beans

The pinto bean is rapidly coming into favor with the dry farmers as a cash crop, but owing to the wrong methods the yield is usually about one-third of what it should be. Altho the winter fallow worked over again in the spring is the ideal seed bed for beans, yet they can be very well raised on the early spring plowing.

In 1908 the writer planted a quarter of an acre on land which had been plowed 12 inches deep the previous year for potatoes. This land was plowed 10 inches deep on the 5th of March, and disked and harrowed on and off until May 20th,

Cont'd. on Page 12

An Ideal Stand of Sorghum for Forage on United Experimental Farm, Tucumcari, N. M.

Call an Agricultural Conference

BUREAU TO AID FARMING FORMED IN DENVER

A conference of agricultural interests of Colorado is called to meet in the City of Denver on April 6 and 7, 1917. This conference will be held under the auspices of the Live Stock and Agricultural bureau of the Denver Civic and Commercial association.

For the past two years or more the public has been discussing the high cost of living. After blaming trusts, speculators and the war for the market conditions, the people are at last awakening to the real cause, underproduction of food products. While there has been a gradual increase in the production of agricultural products during recent years, the increase in population and the incident increase in demand for food to fill more hungry mouths has been much greater than the increase in food production. Partial crop failures in 1916 and the great war has intensified a natural condition that must have, sooner or later, awakened the American people to the fact that we must speed up on agricultural production if we would feed ourselves.

The Agricultural Bureau of the Denver Civic and Commercial association is composed of business men, members of the association who are particularly interested in agriculture. Under a recent reorganization of this bureau, it is planned to invite persons living outside of this city to become associate members of this body and cooperate with the bureau in uniting the agricultural forces of the whole state for a greater combined effort to increase agricultural production.

While the prevailing high prices on food products might be considered incentive enough to induce the greatest possible effort to increase agricultural production, it is believed that if that effort is conducted along systematic and the most intelligent lines, the results will be more satisfactory. Both the state and federal governments have provided many agencies for assisting the farmer, but much of this valuable aid to production is lost because of a lack of organization, both among the business men and farmers.

Through the Agricultural Bureau of the Denver Civic and Commercial association it is hoped to bring together the business interests of the state, governmental agencies and the farmers. Every section of Colorado is conducting its agricultural operations along independent lines and without knowledge or regard to the work being done in other sections. Each of these sections have problems of their own which they are trying to solve unaided. Through this bureau it is hoped to bring about co-operation, a better understanding of the agricultural problems of the state as a whole and improve the conditions wherever improvement is possible.

The business organizations, banks and county government in each county are invited to assist this movement by arranging to have representatives at the conference in Denver on April 6 and 7. Both government and state agencies have already signified their desire to cooperate with the bureau to the fullest possible extent and it is hoped that an organization may be built up that will be of practical value.

The officers of the bureau are as follows: Ex-Governor E. M. Ammons, chairman; President C. A. Lory, of the Agricultural college, vice-chairman; Fred P. Johnson, secretary; Lee A. Reynolds, treasurer. These officers are all members of the board of control which also includes the following: Lou D. Sweet, A. J. Simonson, Charles G. Smith, John E. Painter, George T. Wells, Charles A. Gebhard, John F. Vallery, H. W. Moore, A. D. Wall, J. A. Shoemaker and E. McCrillis.

Sudan Grass Most Dependable Dry Farming Crop

Continued from Page 5

be planted very deeply—1½ to 2 inches should be the limit in ordinary seasons.

Sudan grass belongs to the sorghum family. Consequently, it only thrives when soil temperature conditions are proper. A cool soil will cause the seed to rot. Consequently, it is seldom advisable to plant it earlier than June 1st in most of our Colorado sections. That is, the soil should be warm and all danger of frost past before the crop is seeded.

Where the crop is planted in rows for cultivation, cultivation should be very similar to that given corn. Only sufficient cultivation to keep down weeds is necessary. If a crust forms, additional cultivation to destroy the crust or prevent its formation will be needed.

Prolific Seed Producer

Sudan grass is a prolific seed producer. When harvested for seed it may be cut with the binder, the bundles being made small and shocked in small shocks. Or it may be cut with the mowing machine and cured in small cocs for threshing.

When used for hay, the crop may be cut with a corn binder; if it is planted in rows, sometimes with the grain binder, and it is always possible to cut it with a mower and rake, handling the crop as loose hay. In good years two crops may sometimes be obtained the same season. In very dry years a single short crop will be the probable result. Under irrigation, in warm sections, two crops may nearly always be obtained. One of these might well be a seed crop, and the other purely hay. While if the seed is allowed to mature, the plants become woody, the straw after the seed is threshed out is still of considerable value for hay purposes. Since it is woody there will be somewhat more waste than there would be with the crop cut at the proper time. For hay purposes the crop may best be cut when the seed is in the milk, or just past that in the soft dough stage.

In writing to advertisers be sure to mention WESTERN FARM LIFE.

SUDAN GRASS

Practically every farmer in the West now knows this valuable crop. Withstands dry weather and produces a fine crop of hay that is superior to Millet and equal of Timothy. Under ordinary conditions it yields from two to four tons of hay per acre and under irrigation reaches as high as eight to ten tons per acre.

Plant Barteldes' Sudan Grass

Our seed is pure—cleaned and recleaned. Seed is very scarce and we are fortunate in having a good stock of Sudan seed on hand. Our FREE CATALOG of field and garden seeds sent postpaid on request—also special weekly price list. This is our 50th year of success—the result of honest dealing. Lowest quotations on quality seed.

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Let us start you in a business that will make you from $15 to $50 a day when farm work is slack. Other men have done it for years with an Improved Powers Combined Well Boring and Drilling Machine

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Same rig bores through any soil at rate of 100 ft. in 10 hours, and drills through rock. One team hauls and operates machine. Engine power if wanted. Easy to operate—no experts needed.

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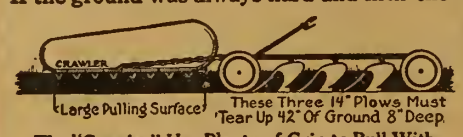
Note the Broad Ground-Gripping Surface of the Crawler

This makes the BATES STEEL MULE the most powerful three plow tractor in the world at its drawbar. The Crawler on the Bates Steel Mule enables it to work on any soil, wet or dry, and secure maximum drawbar pull.

If the ground was always hard and firm the MULE would not need a Crawler for pulling its load, but a *general purpose* tractor must work on soft plowed ground just as much as on hard ground and is required to do as many days work in the Spring when the ground is *soft*, as it is in the Fall, when the ground is *hard*. It's the Crawler that pulls the load, *not the motor*. All a motor does is to give the Crawler all the power it can use.



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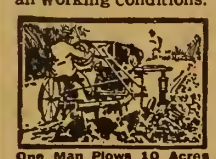

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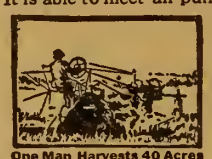

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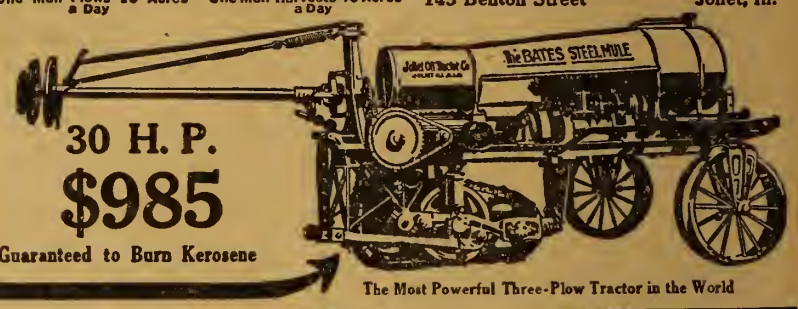

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567 Evans Block DENVER, COLORADO

Seed Beans in Weld County

About 10,000 acres of irrigated land in Weld county will this year be devoted to the production of seed beans for garden purposes. Several of the largest seed houses in America are making contracts with growers for their 1917 bean seed supply, including twenty-six varieties of green pods and wax beans commonly grown in gardens all over the country.

This industry is entirely separate from that of growing pinto beans for market, the acreage of which for 1917 is estimated at 25,000 against 16,000 acres in Weld county in 1916.

Seed bean growing got its real start last year, as a result of tests that showed more satisfactory yields, higher germination and greater freedom from diseases of the beans grown under irrigation in the Greeley district than in any other bean growing region in the United States. The result is that such concerns as D. M. Ferry & Company of Detroit, Keeney & Sons, LeRoy, N. Y.; E. P. Clark Seed Company of Connecticut and the Allen Seed Company of Sheboygan, Wis., have made contracts with growers for 1917.

Last season, which was generally considered a poor bean year, growers got as high as $80 to $100 per acre revenue from their seed beans. The crop is carefully handled, the seed being advanced by the company making the contract, and being returned, bushel for bushel, when the crop is harvested. In that way diseases, weak germination and other bean troubles are avoided, as every bushel of seed is carefully tested by the company before being sent out to the grower in spring.

Contracts this spring are being made at 5 cents a pound for green pods and 5½ cents for the wax beans, which is an advance from last season of three-fourths of a cent and one cent a pound respectively.

The seed bean industry is one of the results of the activities of the Greeley Commercial club, that organization interesting the eastern seed houses after careful tests were made as to adaptability of the soils. Secretary J. F. McCreery has compiled figures on the cost of growing seed beans for market and finds this to be $17.55 per acre for green pods and $17 for wax beans. With the high prices paid by the seed dealer the grower finds this a profitable business, though involving very careful handling.

While the seed business is big, the growing of pinto beans for the commercial market in the Greeley district this year promises to be even bigger. The pintos began to sell early in 1916 at 3 cents and this winter prices to the grower have gone as high as 8 cents. Those who are in touch with the industry in Weld county believe there will be plenty of seed available to plant the expected 25,000 acres.

An effort is being made to interest some of the growers in the production of pinto beans for seed, as the crop is showing the effects of lack of seed selection. Unless present methods are changed the industry will be shortlived in the Rocky mountain states.

Catarrh of Stomach

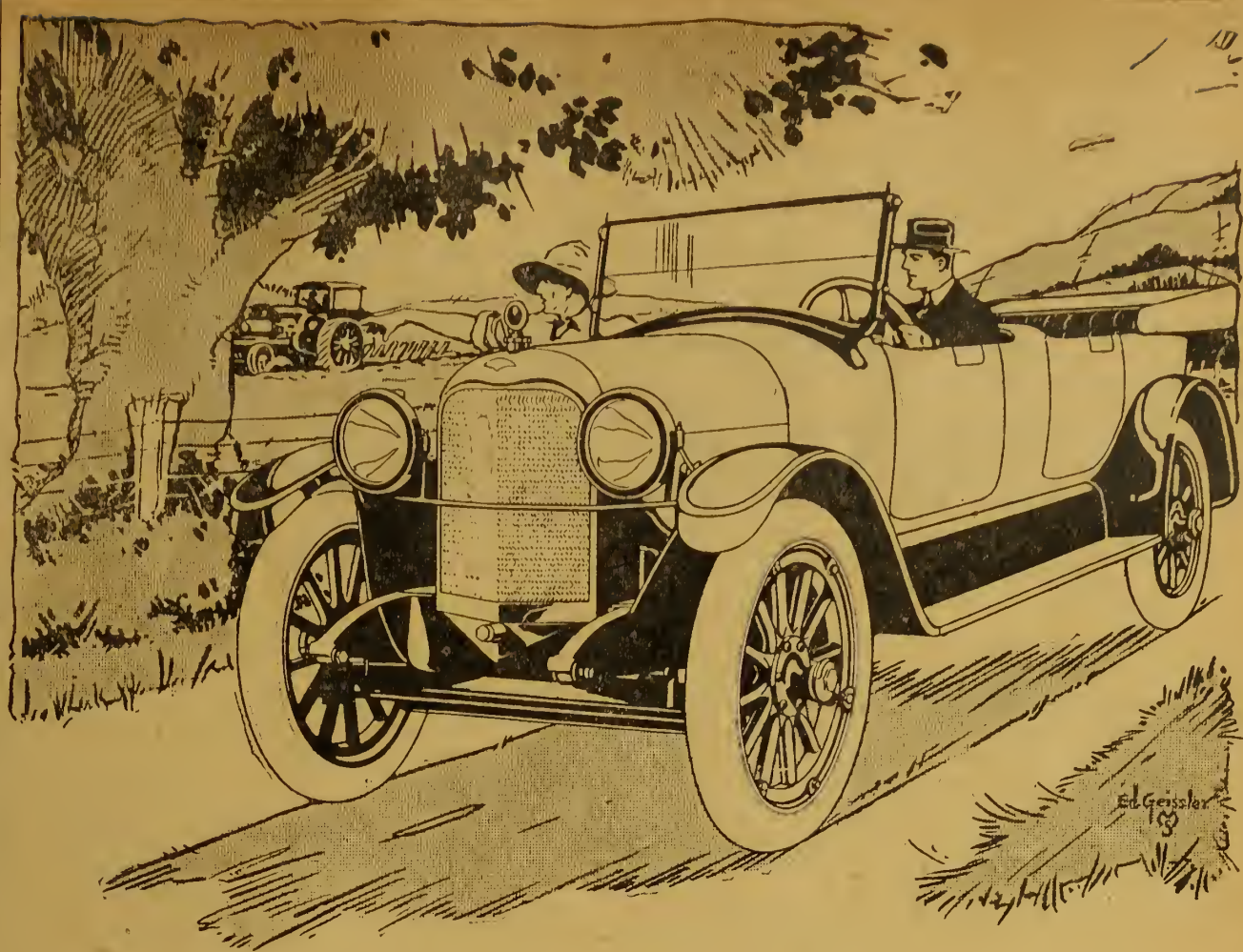
What is the matter with my dog? He is a good cow dog and don't want to lose him. He has been sick about six months. He has a good appetite, but throws up everything as soon as he eats.—A. E. P., Sunset, Colo.

Vomiting in the dog is a symptom of many conditions, but more especially of irritation somewhere in the digestive tract. The dog probably has catarrh of the stomach, following distemper. Try different kinds of food, especially raw meat. In some of these cases dogs will do well on the dog biscuits. If the vomiting is caused by intestinal parasites, special treatment is indicated, and a successful issue may be expected. Treatment given to stop the vomiting will not be successful unless the cause is removed. Make further observations and give a full description of symptoms and conditions.—G. H. Glover, Colorado Agricultural College.

System Out of Condition

I have a male pig about ten weeks old that is lame in his front parts. He can hardly walk, and I can't tell whether it is his feet or legs. I had him in a pen, but turned him out, thinking it would help him, but it doesn't seem to do any good. When I feed him he gets on his knees. Do pigs have rheumatism or gout? Please tell me what to do for him.—W. V. M., Marion, Ida.

Feed the pig a soft mash and alfalfa, and for two or three days put in the mash a tablespoonful of Epsom salts once a day until his bowels are in good condition.



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A used car has been "through the mill." Its motor and all of its working parts have been subjected to constant strain.

Its "finish" has been knocked off—**if it will come off at all.**

Its gears, its rear axle and its transmission have endured the punishment of day-in and day-out pounding. All of its weakness is plainly evident—and likewise its **strength.**

The used car either stands before you a broken down, dispirited "has-been—or a strong, robust champion of many battles—ready and eager for all the service that man can give it.

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On Moisture and Crop Conditions

SPRING PROSPECTS ARE CONSIDERED FAVORABLE

The following reports of moisture and prospective crop conditions were received from Colorado, New Mexico and Wyoming correspondents up to March 20. The general trend is favorable, early deficiency in snowfall being, in most sections, overcome by the storms of March. Government snowfall reports up to March 1, the latest available at this time, show for Wyoming 16 per cent better moisture conditions in the mountains than at the same period last winter. In Colorado's mountain districts the February snowfall, as a whole, was below normal, tho the South Platte watershed even then showed a greater water content by 0.74 inches than for 1916, with the greatest deficiency in the southwestern watersheds, and an excess in Boulder and Larimer counties. New Mexico at the same period showed a depth of stored snowfall that was unfavorable. March has, however, been marked with numerous snowstorms, particularly in Colorado, and it is believed that the official snowfall reports for the month just closing will show irrigation water prospects to be highly favorable. ,

COUNTY AGENTS' REPORTS

Kit Carson County, Colo.—We did not have a normal precipitation thru the winter, unless the recent snow was sufficient to make up for the deficiency. Most reports indicate that winter wheat is somewhat damaged. There has been some damage from blowing. The recent winds did most of this damage. The wheat was not well covered with snow. The recent heavy snowfall of about eight inches promises to be a fine start for the spring.—P. N. Flint.

Las Animas County, Colo.—Our soil moisture conditions are fair; better than last year at least, due to the fact that the ground has been frozen, and hence the moisture could not escape so easily. Land that has been plowed before, if we get a reasonable amount of spring moisture, ought to be in excellent shape for a crop this spring. I am speaking now of dry land conditions. Our irrigated lands of course are taking care of the moisture in their own way.—Charles E. Smith.

Fremont County, Colo.—The biggest crop in Fremont county—our fruit—looks very promising. We shall have a full crop of apples and cherries if there is no frost coming. A few of the black raspberries have been winter killed. I should say there will be 75 per cent of a crop of berries. The precipitation has been frequent but the winds have dried up the ground so quickly our results have not been as good as if we had had deeper snows and less frequent. However, the precipitation has been above average. Besides the winter killing of a few black raspberries, the winter wheat suffered from blowing. Ground is being plowed now and is turning over nicely. There is considerable new land to be turned this spring. Prospects, considering all things, are very bright, and fruit men especially are pleased.—R. R. Jeffries.

Adams County, Colo.—The amount of snow has apparently been below normal and yet the ground in many parts of the county has been covered with snow during almost the entire winter. This is undoubtedly due to the great amount of cold weather which we have had. In the early part of February we had quite a little wind, but at the time the ground was frozen and there was very little damage from sand cutting. The injury from freezing of wheat appears very small. Farmers, in general, report their wheat in excellent condition. The interest seems to be very strong for growing beans this coming year, and all indications seem to show that there will be a greater acreage than last year.—George R. Smith.

Garfield County, Colo.—There was an unusually heavy snowfall on the Western slope this year. The winter wheat was protected by the snow and appears at this time to be in excellent condition. There was no damage done from blowing or freezing. The soil is in excellent condition at the present time and well filled with moisture. Owing to the early frosts last fall there was not much fall plowing done and the spring plowing has not yet commenced. From all indications there will be a large acreage of all farm products planted this year and with the excellent winter, which we have had, there is no reason why we should not have good crops.—R. C. Allred.

Logan County, Colo.—The precipitation during this winter has been normal and the winter wheat is coming thru in fine shape. The snow has not laid on the ground very long except in the sheltered portions, where it had corn-stalks or stubble to keep it from blowing. In just the last two days we had a good wet snow which has laid on the ground evenly to a depth of three and four inches. There has been no damage done from freezing; some damage, however, has been done to a slight extent thru blowing, tho this is almost negligible. The recent precipitation insures us good conditions for spring planting. The indications are that about the average of spring wheat will be sown. Beans are top-notch this coming spring. Various enthusiastic bean-growers are planning to devote anywhere from two acres to as high as one thousand acres to Pinto beans.—Geo. C. Burckhalter.

Boulder County, Colo.—I believe crops will be in very good condition after the last snow. Our snowfall during the winter has been light and the ground has been bare a great part of the time, leaving it exposed to the winds. I am unable to state at this time just what this has done to winter wheat. Farmers seem to think it is in pretty good condition, altho I think considerable damage has been caused from the blowing in some localities. From indications now, farmers will be late in getting crops in, and spring work will be delayed. A goodly amount of spring wheat has been sown, but there is considerable yet to be sown. Farmers around this neighborhood are planting mostly Marquis wheat this spring.—H. H. Simpson.

WYOMING

Fremont County, Wyo.—We have had more than normal precipitation this winter. Winter wheat is produced here to a very limited extent; it is just being introduced. However, it makes better yields than the spring-sown wheats. Our ground is still frozen hard and we cannot tell yet what the winter damage has amounted to. We have had a very severe winter and chances are that we have had winter killing of alfalfa in places where the snow has blown off. However, in most places where crops are grown here the snow has covered the ground for four months and we expect to see crops looking better than usual in spite of the severe winter. We don't have as much wind in Fremont county as other counties have, and but little damage has been done by it. Because of the heavy snow the soil here is filled with moisture. It is feared that spring planting will be a little late as the frost is leaving very slowly. We are starting the growing of sugar beets this year and will have from 600 to 1,000 acres in beets this summer. We expect this to make an ideal beet district.—Guy Hobgood.

Laramie County, Wyo.—Precipitation for the winter has been slightly above normal. The early part of the winter was particularly so. January, however, fell slightly short. Considerable winter wheat was planted last fall and there are grave doubts as to whether or not it came thru the winter safely. In some sections of the county the grain started in good shape last fall, but during the dry spell quite a lot of it died and will have to be replanted this spring. That which did not dry out last fall has come thru the winter in good shape, the blowing anl freezing doing little damage. The ground has been frozen most of the winter, and for that reason snowfall has done very little good, as most of it was blown away and little of the moisture went into the ground. However, the recent snows have done considerable good.—R. E. Reynolds.

Platte County, Wyo.—Our precipitation this winter has been below normal; high winds prevailing would not allow snows to lay on the ground. Up to date no spring plowing to speak of has been done, ground still frozen. Winter wheat: As yet we cannot tell what it will be; is well covered with blown soil and sand in places. However, in some places the blowing has not affected the crop. Some is blown out and some cut out on the hills and ridges. Quite a lot of winter wheat was not seeded until late in the fall and did not get above the surface before freezing. The opening of spring will tell us what to expect from these fields. Our trees largely have suffered

Continued on Page 13

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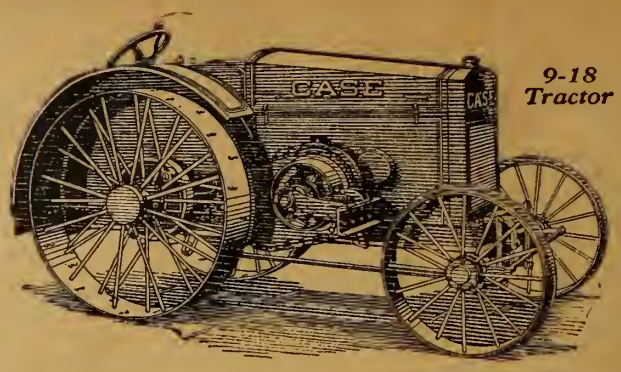

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Farm Loan Interest, 5 Per Cent

INFORMATION ABOUT DISTRICT BANK DIRECTORS

THE interest rate on loans from the Federal Farm Loan system will be five per cent for the ninth district, which includes Colorado and New Mexico. This announcement comes from Mr. Ralph Voorhees, treasurer of the District bank, with headquarters at Wichita. Mr. Voorhees is the Colorado member of the board and makes his home in Denver. That there will be no trouble in disposing of bonds to produce more money to lend to farmers after the original capital has been loaned out is evident from the fact that the Farm Loan board has an application from a New York concern representing three large financial houses, for the first one hundred million dollars in farm loan bonds. Applications for bonds have been made to the district bank at Wichita constantly since the institution opened its doors.

No bonds can be issued, however, until loans have been made to the amount of at least $50,000. Applications for loans are being considered as rapidly as possible. Naturally in starting the system, which is the biggest farm loan business ever attempted in the world's history, there is some delay and confusion. The ninth district was the first to be fully organized.

Farmers in Colorado are interested in knowing something more about Mr. Voorhees, to whom they look as their special representative. He is a native of New York state, but has lived in Colorado thirty-seven years, all of that time in Denver. While he has always been active in public movements, he has held but one public office, that of member of the state legislative assembly. He served in the House of the eighth general assembly, the same session that witnessed the beginning of the political activities of ex-Governor Ammons.

Mr. Voorhees was especially interested in matters pertaining to the moral betterment of the community. He was the author of the "wine room" act and the Sunday closing and midnight saloon closing laws. The "wine room" act was fought by the liquor interests, who took the matter to the United States Supreme Court, where it was finally sustained. It continued in effect until superseded by the prohibitory law.

Mr. Voorhees became a member of the Society of the Sons of the Revolution twenty-five years ago and has been prominently affiliated with patriotic movements in that quarter of a century, being among those who inaugurated the first Flag day in Colorado. For seven years he was a member of the Honest Election League, an organization that ended ballot box stuffing in Denver and cleaned up election frauds which once were notoriously common.

For three years he served as chairman of the executive committee of the Business Men's association during its successful fight for fair telephone rates.

During all this time Mr. Voorhees conducted a successful real estate and land business, in which he is still engaged. He is the owner of a farm in Weld county and also has other farm lands in eastern Colorado. His farm ownership and the fact that he has been selling Colorado lands for thirty-five years qualify him in a peculiar way to act in his capacity as a director of the Federal District Bank of Wichita. He is posted on land values and has an intimate knowledge of the specialized lines of agriculture followed in the Rocky Mountain region.

About Other Officers

D. F. Callahan, president of the District bank, for some years has been the active head of the Farmers' State Bank at Kingman, Kan. Mr. Callahan's banking experience has been primarily with an agricultural constituency. Moreover, he has conducted an extensive farm and cattle loan business thruout western Kansas and has wide personal knowledge of farm land values within the territory of the Land Bank at Wichita. Mr. Callahan is himself a practical farmer. He was raised on a Kansas farm and today owns and conducts two of the largest farms in Kingman county. By valuable practical experience and training he is well equipped for the presidency of the new bank.

Milas Lasater, of Oklahoma City, is the son of one of the pioneer cattlemen of Texas. He has been cattleman and stock farmer, and for five years was the active manager of the First National Bank of Pauls Valley, Oklahoma, of which he is now vice president. For the past six years Mr. Lasater has been district manager for the Equitable Life Insurance Company of New York, covering the territory of Kansas and Oklahoma. He operates a large farm and stock ranch near Pauls Valley.

T. J. Guilfoil, of Albuquerque, New Mexico, has had practical experience in accounting in all its branches and in office management, having held responsible positions in mining, railroad, mercantile and manufacturing concerns. He was assistant traveling auditor and bank examiner of New Mexico, was public accountant for ten years, where it was necessary to report on enterprises for purposes of obtaining credit, for the issuance of bonds and securities. He represented the Carlsbad Water Users Association and the Elephant Butte Water Users Association, the El Paso Water Users Association before the Cost Review Board to determine thru revaluation the amount payable to the government for the construction of irrigation projects. He was connected with the Agricultural College of New Mexico.

Thomas A. Hubbard, of Rome, Kansas, has been a resident of that state for more than thirty years, during which time he has been continuously engaged in farming. He owns a large farm which he occupies and operates successfully, specializing in the breeding of pure bred swine. He has been president of the State Board of Agriculture of Kansas and has long been prominent in agricultural affairs in his state.

W. P. Z. German, of Muskogee, Oklahoma, who will fill the position of registrar and attorney, is considered one of the best title lawyers in Oklahoma. He has practiced law in Muskogee twelve years, and before that he practiced in Texas.

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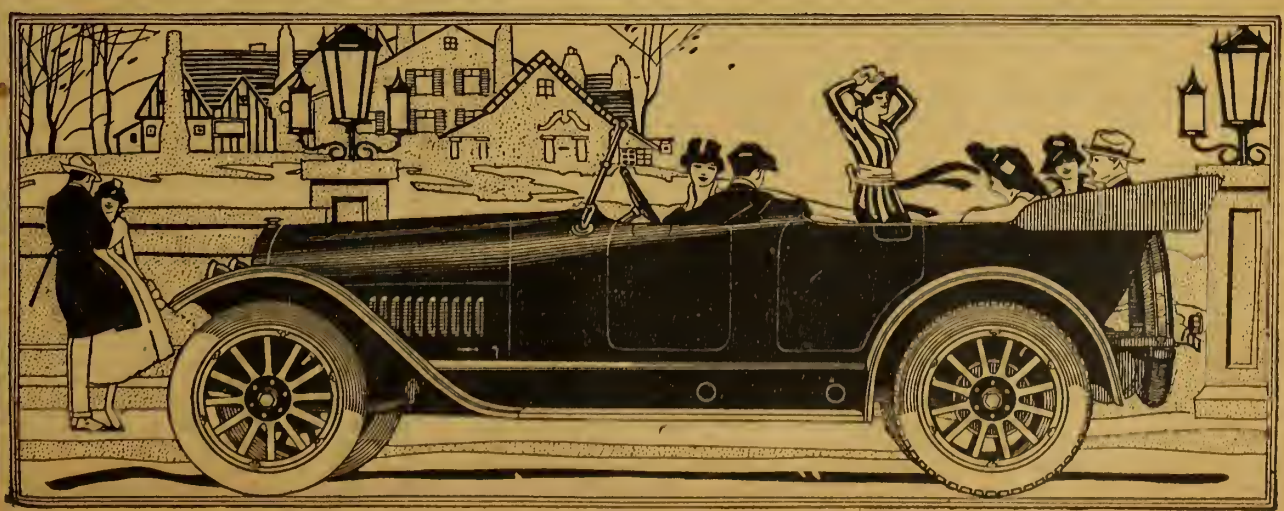

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World's Food Shortage

Exceptionally cold weather in western Europe is responsible for poor condition of autumn sown cereals, according to reports of the International Institute of Agriculture. A decrease in area of wheat is apparent in France, while Great Britain and Ireland report retardation of field work due to bad weather. Italy reports about normal conditions, in spite of unusual cold. The wheat districts of British India make a more favorable report, but there has been great damage by excessive moisture in the rice growing sections.

From the southern hemisphere comes announcement that Australia has harvested a wheat crop up to that of the previous season, but below the average. Australia and Argentina, the two most important sources of wheat south of the equator, have a combined yield 30 per cent short of the previous year and 8 per cent below the five year average.

Final figures on the world's potato supply given by the International Institute puts the shortage at about 20 per cent. These figures confirm editorial statements in our last issue regarding a world wide shortage of food products. The consumer cannot expect materially lower prices until the next crop is harvested, and even then, with the world in a topsy turvy condition, with millions of farmers in the trenches, it means continued large demand for meat, wheat, potatoes, beans and other food staples.

Even should peace come before the next harvest prices of foodstuffs will not be radically reduced, tho they may be brot down to a more reasonable basis. More than one crop year will be required to restore normal conditions in Europe after the war ends. Food and feed crops are always safe investments, and especially so in these times.

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Denver's Opportunity

The Farm Bureau of the Denver Civic and Commercial association recently decided on an aggressive policy of agricultural development covering the state at large. As a beginning the bureau aroused the interest of Denver's business men in agricultural legislation then pending before the Colorado assembly. While it was a little late in the session for effective work, some good was accomplished in furthering appropriations that are to be used in agricultural extension work.

One of the first tasks that confronts the bureau is to awaken the business men of Denver to a realization of the fact that Colorado's permanent prosperity depends upon agriculture. The war has caused a temporary revival of the metal mining industry, but at its best this industry will remain in second place. There has been encouraging development of manufacturing, but this is limited to the character of raw material available and dependent upon transportation and markets.

Agriculture is the one industry that offers the greatest future for several reasons: availability of undeveloped lands for additional settlement; increased productivity of lands now cultivated by the application of improved methods; more economical use of water for irrigation; development of irrigation by pumping the inexhaustible underflow thru the use of cheaper power and more efficient lifting machinery; better adaptation of certain forms of plant life to semi-arid conditions thru scientific breeding work; intelligent marketing and distribution.

Denver is the metropolis of the Rocky Mountain region, and as such the city benefits by the development of the surrounding country. This is going on now without especial effort on the part of Denver to aid this development. The question of how the city can help is one that needs careful study. The details are receiving such study by those active in the bureau's organization, and it is to be hoped that out of the various suggestions will come a plan that unselfishly seeks the benefit of the state at large and not that of Denver. This may, perhaps, be best accomplished by securing the services of a strong man to head the bureau—a man whose word will count among the farmers; who can go to them with the voice of authority; who can be of aid to the existing organization at Fort Collins that seeks to reach the farm and home thru extension work by state lecturers and county agents. Under present conditions this work is confined to certain counties. At the time this is written there was hope for legislative aid that would broaden this work and make it statewide. Denver's agriculturist, if given proper financial support by Denver, could do his share in spreading the gospel of better agriculture. Other trade centers have been successful in such work, but only because they have borne all of the cost, and have unselfishly placed their educational resources at the command of agricultural communities.

Several of the smaller cities of the state are effectively backing agricultural education thru their commercial associations. Their methods deserve study and application on a statewide scale by Denver and at the expense of Denver.

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Farm Loan Bonds

Word comes from the officers of the Federal Farm Loan system that one concern in New York has offered to take the first one hundred million dollars of farm loan bonds to be issued. This offer is not surprising. Students of the law believe that the bonds are the most attractive investment ever offered the public. Investment brokers will find them a safe and convenient form of security for their clients. Private individuals will be attracted because the bonds are to be issued in denominations as low as $25; because they will be absolutely non-taxable and because the farms back of them will get the benefit of every dollar loaned, thus increasing the value of the security and the safety of the bonds.

The interest rate on mortgages in the district including Colorado and New Mexico is fixed at only five per cent, and our farmers, especially those on non-irrigated lands, will get much larger loans than they have ever been able to get thru private sources. Private capital has been skeptical in regard to so-called dry land farming. In the first place, it has not been understood by eastern money lenders, and in the second place, these lenders have been dealing only with one individual. Under the Federal Farm Loan system the borrowers pool their credit, their character, their farming ability, their methods and their soil. One or two in an association may be weak, but the others, for the protection of their own credit, see the weaker member thru. And in case of emergency, it is possible for a local association of borrowers to get a loan from the district bank to carry along a member who, for some reason, defaults in his annual or semi-annual payments.

In short, the arrangement is a cooperative one in its broadest sense on the part of the lender, nominally the government, and the borrower. In the last analysis the lender is the American investing public, but this lending is done thru governmental channels that safeguard the interests of borrower and lender, protect the borrower from extortionate rates and the lender against default or misuse of the funds.

Let prospective borrowers be patient with the Federal District bank. The officers are doing their level best to get things in motion. Give them a chance. Some will be disappointed in not getting their money as early as expected, but it will be just as good when it does come.

Announcement of New Department

Does it pay? If the answer is "yes," we are all interested and eager to know how and why. Farming is no exception to the rule that governs the commercial world. The farmer must know that a given line of action will bring certain returns, else it is useless to encourage him in that particular practice.

That is why I now have another announcement to make toward improving the service given our readers from the editorial standpoint. Prof. George E. Morton, head of the Department of Animal Husbandry of Colorado Agricultural College, has been engaged to conduct a department on Dairying and Hog Raising. His services are available for advice and suggestions that will help you in establishing a paying dairy herd, or a flourishing hog business, or both—for the two should go together. If you are already engaged in either branch, the department aims to help you in solving problems that are encountered in handling the hogs and cows. Bring us your questions regarding breeds and breeding of dairy animals or swine. Ask about feeds that produce pork or milk. Let Prof. Morton advise you about the silo and ensilage crops.

From time to time he will discuss various phases of the business, but to make his work more effective and practical, your questions are necessary.

Prof. Morton has been engaged for thirteen years in teaching livestock production to college students and adult farmers. He has developed purebred herds of dairy cattle, as well as beef stuff. His work in hogs and sheep is well known to breeders and farmers generally. He is a recognized western authority on animal husbandry, rated high among scientific men and farmers. He has the ability of conveying to the practical man in terms of the farm the information that is being developed scientifically by the colleges and experimental stations. He has been talking to farmers at institutes for many years.

Western Farm Life is now giving him the opportunity to talk to more farmers in each issue of the magazine than he has been able to reach in a year heretofore. In extending his field of activity we are looking ahead. The first consideration is to aid our readers in making their farms more profitable this year. The second is to provide for the future, in making maintenance of soil fertility a part of the general farming plan. The permanence of our western agriculture depends upon the development of livestock farming. If we sell the fertility with our cash crops it means a run down soil. Our western soils are naturally rich in mineral elements, but lacking in humus which is necessary to increase the water holding capacity of the soil and to release the plant food already in the soil. Livestock supplies manure, which is the most economical and effective source of humus.

So livestock on the farm does pay, in more ways than one, and it will be the aim of this new department to show in detail how and why it pays to keep dairy cattle and hogs.

Prof. Morton was born and raised on a 300 acre stock farm in Wisconsin. He was graduated from Milton College in that state and then took graduate and agricultural work for two years at Wisconsin University, coming to Colorado from there, and taking his degree in agriculture at Colorado Agricultural college. He was then engaged for three years in agricultural work at the University of Wyoming; was employed by the United States Department of Agriculture as a specialist in animal husbandry and helped start the sheep breeding experiment in Wyoming for the government. In 1907 he returned to Colorado, to take a position on the staff of the Agricultural college. Three years later he was made head of the animal husbandry department.

In 1913 the state legislature enacted a law placing the dairy department under control of the Agricultural college, and Prof. Morton was made State Dairy Commissioner, which position he now holds, in addition to his duties as head of the animal husbandry department.

His standing as an expert in animal husbandry is best attested by the fact that he is recognized as a judge by three of the greatest breeder's associations in America, a distinction that has perhaps come to no other college man. He is official judge for the Holstein Fresian Association of America and the Shorthorn Breeders' association, and has been recommended for judge of the American Jersey Cattle club.

The statement of these facts concerning Prof. Morton is sufficient to assure our readers that his advice on livestock will be authoritative.

W. S. Edmiston
General Manager.

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Burlington Pushes Potato Industry

The Burlington railway, thru its agriculturist, Mr. J. B. Lamson of Chicago, is planning to develop the potato industry along the C. & S. "high line" from Denver to Falcon. The Arkansas Divide region, even way back in pioneer days, was discovered to be peculiarly well adapted to potato culture. Along in the early nineties potato growing was developed on a somewhat systematic scale and many carloads of market and seed potatoes were shipped out. The seed potatoes grown on the highlands without irrigation were especially in demand in irrigated potato districts.

Failure to select seed and lack of crop rotation brot the inevitable result. The industry all but disappeared until within the last three years, when mainly due to the educational efforts of County Agriculturist Lauck of El Paso county there came about a revival which promises to make potato growing permanent. Good crops were produced in 1916 without irrigation and in spite of a dry summer. Improved cultural methods are responsible.

The Burlington is announcing a plan for aiding this development, first by securing the planting of test acres on many farms this year, probably of the Early Ohio variety, which, with a favorable summer, will bring good prices at a time when potatoes will be in big demand. This work is the forerunner of the development of a permanent seed growing industry, which is to be aided by the company's agriculturist in every possible way. The company will seek to locate good seed for this year's planting; will treat the seed free of charge before turning over to the planters and will aid in finding a market for the product next summer.

The company recently established agricultural headquarters in Denver in charge of Mr. O. H. Lieber, with offices at 567 Railway Exchange. Mr. Lieber has charge of the company's agricultural activities west of the Missouri river and will devote a large share of his time to Colorado.

Comment by Farmer Putnam

WRITES ON DRY FARMING IN A FASHION THAT IS ANYTHING BUT DRY

Denver, Colo., March 25, 1917.

SOME fellers is allus takin' the joy outen life. Here I was thinkin' that I was foolin' everybody and makin' 'em believe that I was a Missourian, and now a farmer sez he's discovered that I'm the same Farmer Putnam that was travelin' thru Eastern Colorado writin' articles ten years ago! Wall he's right as fur as he goes. I was out here ten year ago and before that, but I done went back and tried to git acclimated in Missouri ag'in but I couldn't make it. This mountain air was in my blood.

I ain't exactly no fifty-niner, but I come out here fust before they was much of any farmin' on the Colorado plains. It was all cattle and sheep in them days. Some of you farmers probably remembers J. E. Payne, the feller from the college that used to run the experimint farm at Cheyenne Wells? I seen him last fall down to Amarillo, where we was attendin' a kafir convention and barbecue—mostly barbecue. Me and him climbed around over the walls of Palo Dura canon where we had the big feed, and he was tellin' me about his doin's out here in Colorado. He's livin' down in Snyder, Okla., now still doin' missionary work among the farmers, fur the Frisco railway. That railroad hires him to visit around and hep the farmers with advice and suggestions, and some of 'em is growin' crops as a demonstration which he uses in his lecture work to tell other farmers about.

Well anyhow I got one of his old bulletins he wrote when he was out to Cheyenne Wells seventeen years ago, tellin' about his trip over the plains and what he seen and what he thot the settlers ought to do to git along. I'm goin' to show you what he said, so's you-all kin see that what was good advice then is good now, and how his advice was took up and the country was made a dairy country:

"At present on account of the demand for beef cattle and the confining work connected with dairying only a small amount of butter is produced. But when the price of cattle goes down again the same natural business law which has forced people to go into cattle raising will compel them to turn their attention to the production of butter and cheese. Free range, cheap rough feed and inexpensive warm stables will help them to make winter dairying profitable. When they get to this all products will be sent to market in condensed form, and the importance of the problem of transportation will be reduced. The country can then support sufficient population to supply good schools for the children. Each family can have a small garden, a few fruit trees and some small fruit for home use. These can be irrigated from a well."

That was wrote in 1900. Payne was farmin' on the Cheyenne Wells station fur a few years and then he was sent rummagin' around over the prairie by Doctor Carpenter, who was head of the State Experimint station. Dr. Carpenter was a irrigation engineer and a good one, and he was kind a prejudiced ag'n them dry lands. He didn't believe nothin' much could grow without waterin', so he told Payne to see if he could find out was any of them farmers really doin' good. Payne got a rig and he drove all over the prairie from Sheridan Lake to Wray. Well he found out that they was only one settlement that was makin' good on grain raisin' alone; that all other places where the settlers was stickin' to the country it was because they had stock and he published this and, like I told you, said that dairyin' was the salvation of the country.

Of course in them days they didn't have no cream separators and they wasn't no big butter factories. The farmer that had milk cows—or such as was called milk cows—made their own butter and brot it to the store with a coupla dozen eggs and traded it fur sugar and coffee and a little calico to make a sun bunnit fur Maw.

All he said in that bulletin come true. Every one of the settlements that he visited in that rig is shippin' cream to market and the farmers is prosperin' just accordin' to the number of cows they's a milkin'; or the number of head of beef stuff they're runnin'. They git credit at the store the same way. In some places when a new settler comes in to the store and asks fur credit the merchant sez: "How many cows you goin' to milk?" You see a business man kin figger up just how much income the farmer is goin' to have if he tends to business and grows crops he kin feed. If one of them fellers comes with a tractor and goes to scratching up about 200 acres of prairie to put out nothin' but wheat or beans, the merchant sez, "We'll wait and see how much rain we git before we give him credit."

Payne said if they followed the plan of the settlers that was dependin' on cows they could support a large population and have good schools. Well you ought to see the schools they got in some of them milk towns. Out to Flagler they spent $40,000 to build a high school last year and she's a dandy, with agriculture classes, a piano, a gymnasium and everything right up to date.

They is one thing tho that many of the settlers is overlookin' or puttin' off from year to year, and that's about the garden and trees. Nearly all of 'em has got windmills and they kin just as like as not have a dirt resevoi and run pipes out from that to the garden, so's they kin grow everything includin' strawberries. Apples, plums, cherries and all kinds of bush fruits does well if they're started with water and the way to do that is to give the trees and bushes fall and winter irrigation from the windmill and use the water on the garden in summer.

Onless the farmers does more to make things pleasant fur the wimmin folks they hain't a goin' to have no happy homes. Them treeless plains gits on a woman's nerves. A man kin git along without noticin' that the prairie is lonesome, because he's got to go to town every week to git new plates fur the grain drill, or send a money order to Montgomery Ward, but with the wimmin folks it's different. Take it specially in winter time when they ain't nothin' goin' on and no place to go to exceptin' the school house every third Sunday, when the preacher comes out from Limon, and half the time on that Sunday they is a blizzard. Wall any woman that's been raised in a country where they is trees cain't hep but miss 'em' even if she don't know what she's missin' and what's a makin' her so blue. Trees was made to be companions fur humans and not just fur firewood.

Them plains farmers could save fuel and fence post bills fur the future if they would git right down to business and plant a woodlot and a windbreak around the house. I been all over them United States and I seen farmin' in some places, down in the backwoods of Arkansaw and Louisiana, where the stumps in a field was thicker then the number of cornstalks, and I been on plains where I could see fifty miles without strainin' my eyes and not a tree in sight. Down in the south the nesters cusses the stumps, but they don't have to pay a cent fur firewood, fence posts or timber fur their houses and barns. Out on the prairie all them things come high and the settlers kick because they has to pay the price. Now you don't see many of them nesters in the piney woods a-diggin' out stumps, and likewise you don't find many of the homesteaders plantin' trees and bushes. Most of us has got a kind of a notion that the world wasn't made just right, and we hate to take the time to fix it, but friends I got to say it, man don't git nowhere here below lessen he puts forth some effort.

It ain't fair to the wimmin folks not to give 'em better surroundin's and now that we're goin' to have some farm loan money out on the plains I'm hopin' to see a little of it go fur windmill irrigation fur gardens and trees and fur water piped in the kitchen. It'll attract the birds and make home so pleasant that the old lady won't be devilin' you all the time fur enough money from the bean crop to go back to visit the folks in Ioway. You'll git more of the folks to come out and look us over if you'll doll up the prairie a bit and make it look homey.

I'm a speakin' from experience. I lived in a sod house myself onct and I killed snakes and prairie dogs and burned cowchips, so I hain't a writin' this outen Payne's bulletin. It comes outen the bulletin of Old Put's experience, which would make a good sized book if I'd a mind to write it. If some of you codgers wants to turn over a new leaf and give the old lady a little of that farm loan money to do with what she wants to do, to fix up the place and make it a little better than a Ute teepee, let me know and I'll give you-all free advice on how to lay out a irrigation system, a garden around the house and plant a windbreak of trees that'll grow on the plains without irrigation. They ain't nothin' finer in summer than good garden sass and in winter some preserves, and kraut and pickles in the cave. It'll cut the cost of livin' and make life more pleasant.

THOMAS JEFFERSON PUTNAM.

Ideal heat keeps out spring rawness!

It is better for the family to keep a little heat going *all* through your home during these chill and damp spring days. Raw, wet weather is dangerous to health. *IDEAL heating keeps whole house warm and dry!* Only a small fire in the IDEAL Boiler is necessary to make *every room* as balmy as June.

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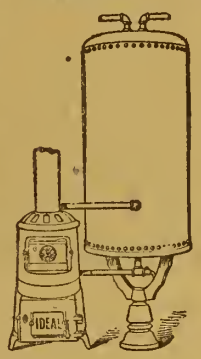

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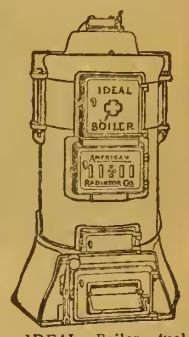

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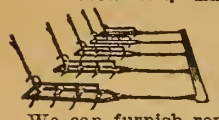

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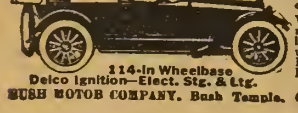

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LE PAGE'S CHINA CEMENT

STANDS HOT AND COLD WATER 10¢

Corn and the Sorghums Our Late Spring Crops

Continued from Page 5

when the beans were planted—one about every 6 inches and the rows about 3½ feet apart. The land was chocolate loam on a clay bottom. The yield was 720 lbs. on the quarter, or about 56 bushels to the acre. The ground had been well fertilized some years previously, but the precipitation was below normal. They were cultivated three times, and no weeds allowed in the patch.

Bean rows should be planted wide apart, otherwise they may choke the interspace and be found difficult to cultivate. In rich soil the stand may be one every four or six inches, or two in a hill every foot. In poor soil they may be allowed more room; but the best is none too good for beans. Rabbits and prairie dogs love to chew them off when they first come up, and will travel some distance in dry weather to get them.

Like any other crop, they may be raised on sod; but the yield will not amount to much unless the plowing was done properly at the right time and the sod reduced by continual disking and harrowing until fine enough to cultivate. We look forward to the time when a 50-bushel bean crop will be a common thing in the west. It requires only about 25 lbs. of seed to plant an acre; but if the plowing is less than 9 inches only about 20 lbs. should be used—less dirt, less seed.

For the proper harvesting of this crop neighbors should combine their resources and purchase a bean harvester; for one of these machines may do the work of quite a community.

As to the Sorghums

All the sorghums, including Sudan grass, feterita, milo, kafir, etc., are raised in much the same manner—planted in rows and cultivated. There is a difference, however, in seeding, which depends as to whether the crop is intended for grain or for fodder or ensilage. It should also be remembered that it is a general rule in dry farming that more seed may be planted when the seed bed is deep, the soil is rich, and plenty of precipitation expected, and less when the soil is thin and shallow and dry weather impending. Four to six pounds per acre is usually sufficient for fodder purposes, but for raising grain from milo and kafir the best stand is about one plant to the foot, and in very dry regions one to every two feet, using only two or three pounds of seed to the acre. Dwarf milo on a deep seed bed has been known to produce 50 bushels to the acre when the corn crop was a partial failure. The sorghums possess the faculty of being able to cease growing in a drouth without becoming stunted and can make a fresh start as soon as the rains come.

OPENING OF SALT LAKE YARDS

The opening of the new stockyards at Salt Lake City will be marked by the first exhibition of the Inter-mountain Stock Show association on April 4, 5 and 6. This will be entirely a fat stock show, but it is planned to make this an annual affair and to interest breeders of beef and dairy cattle, swine and sheep in subsequent exhibitions.

There are three classes in individual fat cattle in addition to the carlot classes of fat cattle, swine and sheep. No entry fee is charged and admission to the show will be free.

The Cudahy plant will begin operations with the opening of the stockyards during show week and Salt Lake City expects from then on to be on the livestock map, serving a large section of surrounding country in which there has been, in late years, a rapid livestock development.

Following is good advice to farmers given by County Agriculturist E. D. Smith of La Plata and Montezuma counties, in the San Juan basin: "Disk the field early and drill in oats or barley in the alfalfa field that has a thin stand. The disking will stimulate the alfalfa growth and the grain will smother the weeds, and the increased yield of forage will repay for the trouble and expense many times."

Have you fruit trees, vines and shrubbery that need attention?

If so, be prepared to Spray the MYERS WAY when the time comes. Make your choice from the Myers Line of Hand and Power Spray Pumps, Nozzles and Accessories, and own an outfit you can rely on for real spraying service, and your results will be most gratifying.

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They plant corn accurately whether used with edge drop, flat drop, or full hill drop plates; whether the corn is checked or drilled. The drop clutch can be changed, while the planter is working, to drop 2, 3, or 4 kernels to a hill. The tongue is easily adjustable to the height of the horses. A handy foot drop lever makes head row planting easy.

When you look over the **International or C B & Q** planter, don't miss the *automatic marker*, a handy feature that saves a lot of work and time. There are fertilizer attachments if you want them, combination pea and corn-planting hoppers, open wheels or closed—your planter will be equipped just as you want it. You can plant rows 28 to 44 inches wide by 2-inch adjustments, with four distances between hills.

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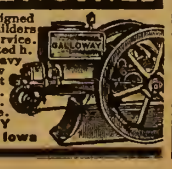

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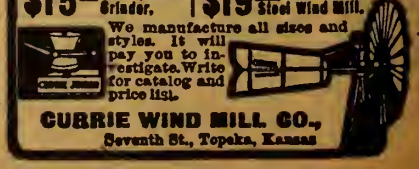

CURRIE WIND MILL CO., Seventh St., Topeka, Kansas

Moisture and Crop Conditions

Continued from Page 8

from lack of soil moisture, and the cold winds have killed the protoplasm of the branches; also some trees have been loosened from the soil, and have dried out badly. There will be some losses. The soils generally need moisture, as last season was far below normal in precipitation. The ground went into the winter rather dry and only heavy spring snows and rains and proper care of the soils can replace this for the season.—B. S. Tedmon, Jr.

Goshen County, Wyo.—The soil was so dry last fall that the wheat did not come up, so will not be as heavy as usual for two reasons; one is that there was not as much seeded and the other is some has blown out because of the unusual amount of wind we have had. There has been lots of snow here and the farmers are making plans to seed heavily this spring. In fact, they will more than make up for what they lost last fall. All indications point toward a good season.—J. A. Helmreich.

Verona, Sheridan County, Wyo.—Hay, $20 to $25 a ton; potatoes, 3c a pound; wheat, $2.25@$2.50 cwt.; ranch butter, 35c; eggs, 35c to 60c thru the winter. Milk cows not as high as stock cattle in proportion. Cattle wintering fairly well. Long and cold winter, hard on stock. An early spring will be a Godsend.—A. P. Dow.

It is yet too early to say anything definite concerning the condition of winter wheat, but the heavy covering of snow during the winter will surely not prove harmful.—Edward C. Paxton, Field Agent for Utah, U. S. Bureau Crop Estimates.

Sheridan County, Wyo.—We have had a very heavy fall of snow during the winter, but it has been intermittent and at times the ground was partly bare, owing to Chinooks. For this reason, I cannot tell whether or not the wheat has been damaged by the winter. My guess is that quite a little of our alfalfa has been killed out and that a large portion of the wheat will be killed. In one or two sections the snow has laid on the ground continuously and, of course, there will be no bad results. At the present time the ground is covered with snow and prospects are we will do no field work before April first. Hay is getting scarce and we will suffer quite a loss unless the weather breaks decidedly very soon.—S. M. Fuller.

Big Horn County, Wyo.—We probably had a little over normal moisture this winter. The winter wheat that is in is doing fairly well so far as can be seen at this time. It is a little early to tell yet. Our winds here do little damage. It has not been quite as cold this winter as last, and probably little damage will result from freezing. Alfalfa generally suffers more or less every winter. The wheat in some parts of the county had a fair snow covering. However, the snow is soon blown off in most places. A thin covering still remains in many places. To date it has been impossible for the farmers to get at any field work. Much manure is being hauled and such work as that is being done by some. Due to a hay shortage, we have been quite anxious in regard to the stock, but it looks now as tho everything will get thru much better than we expected. Probably quite a little hay will be put in next season. Also, there will be quite an acreage of beans, some being contracted and others growing for the general market. Sugar beets will, of course, be one of the main crops, and quite a little spring hard wheat will be put in. The winter is hanging on and unless it lets up soon we will have a late spring and make the work late. However, we hope for an early break, and in that event spring work will soon be the ordedr of the day. The soils should be in good condition and there will be all kinds of water for everybody, as there always is. The new cheese factory, a co-operative organization, to be built at Lovell as soon as possible, will give the Lovell farmers a local market for their milk. This will be the only cheese factory in this part of the state and will no doubt do a large business as soon as it is going. Range stock in general is going to make it in very fair shape if the weather only gives it a chance.—Allyn H. Tedmon.

NEW MEXICO

Carlsbad, Eddy County, N. M.—The past winter has been rather dry. There has been more rain and snow than during the previous winter, but still the precipitation has been below normal. The weather has not been as uniform as in previous years, there being a number of real cold spells. Our winters normally are very mild, with an occasional rain or light snow. The first severe cold spell which occurred in November was rather injurious to the fall wheat. Considerable of the fall sown acreage has been resown this spring on that account. The green bug or spring grain aphis has already made its appearance in this county, altho the infestation is not general as yet. We have had considerable wind already this spring. These winds will make it difficult to keep a moist seed bed for any considerable length of time and may in many instances interfere with the securing of a good stand. Practically all of our commercial crops are grown under irrigation. While there is some farming in the plains section, those farmers have not as yet started to put into operation certain dry-farming methods that have proven successful in other places where the conditions are practically the same as theirs. Only a small amount of choice alfalfa hay remains from last year's crop. The growers are receiving $21 a ton for choice baled alfalfa hay, and the prospects for good prices for hay during the coming season are excellent. The two tomato canning factories in this county are receiving a good acreage for the coming season. There will be fully 5,000 acres planted to cotton this year and a large per cent of it will be planted to the Durango long staple variety. Up to this year the bean has not received much attention in this county, but the prevailing high prices for this commodity has brought about a change and there will be a large acreage planted, mostly of the New Mexico Pinto variety.—J. W. Knorr.

Union County, N. M.—The wheat crop is in fair condition. Some damage has been done by blowing. The precipitation has been about normal for the winter months. Very little snow has fallen and it has not covered the wheat more than two days at a time. In most of the fields there is plenty of ground moisture to help the wheat thru a dry spring. This fell last fall, and where the ground was cultivated to conserve the moisture, there is moisture to a good depth.—Orren Beaty.

Colfax County, N. M.—The precipitation here during the winter months was less than the normal. However, during October we had some good rains, which left the ground in fairly good condition. Winter wheat here is still in pretty good condition, there being more moisture in the ground now than there was last year at this time. There has been no serious damage due to blowing as yet. The wheat has not been covered with snow during the winter. We have had a very dry winter, and prospects for spring planting are not the best. However, there is considerable time yet before much planting will be done in this section, and spring rains will no doubt come and thus greatly improve crop conditions in this section.—V. L. Martineau.

Bernalillo County, N. M.—Conditions in this county are very favorable to a good 1917 crop. Our precipitation was practically normal. Very little winter wheat was planted, but that is showing up well. Most of the wheat planted in this county is spring wheat. Snow was light in the valley, but practically normal in the mountains. Generally speaking, our conditions are very good for spring planting. We are expecting better crops than last season.—H. C. Stewart.

San Miguel County, N. M.—We have not had quite as much snow as we had last year, but there is sufficient moisture in the land to plow. We do not produce much winter wheat in this section of the country. Our prospects for spring planting are very good. Our main crops this year will be spring wheat, corn, beans and the forage crops.—M. R. Gonzalez.

SUGAR BEET PROSPECTS

Moisture conditions in territories tributary to the Great Western Sugar company factories are excellent in most places. There is plenty of moisture in the soil and ample supply of reservoir water seems assured.

The Great Western Sugar company expects to contract for from 190,000 to 200,000 acres of beets in all of its territories, including Colorado, Wyoming, Nebraska and Montana.

The prices to be paid for beets for the coming year are on a sliding scale, based on sugar content of beets at delivery. On such a basis it is expected that the average price will be close to $6.75 per ton, and in addition to this price the company proposes to pay a bonus of 50 cents per ton if the price of sugar is the same then as it is today, which is approximately 7 cents.

EASTERN COLO. NON-IRRIGATED

Fleming, Logan County.—Large acreage winter wheat looks good so far. We think we are going to start in fine shape this spring. Precipitation about normal; no damage from blowing.—Fleming State Bank.

Holyoke, Phillips County.—Large

Continued on Page 17

Standards of Service

In rural communities clusters of mail delivery boxes at the crossroads evidence Uncle Sam's postal service. Here the neighbors trudge from their homes—perhaps a few yards, perhaps a quarter mile or so—for their mail.

Comprehensive as is the government postal system, still the service rendered by its mail carriers is necessarily restricted, as the country dweller knows.

Long before rural delivery was established the Bell System began to link up the farmhouse with the neighboring towns and villages. One-fourth of the 10,000,000 telephones in the Bell System are rural. They reach more places than there are post offices. Along the highways and private lanes the telephone poles lead straight up to the farmer's door.

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APOLLO-KEYSTONE COPPER STEEL GALVANIZED SHEETS are unequaled for Culverts, Tanks, Silos, Flumes, Cisterns, Roofing, Siding, and all forms of exposed sheet metal work. These sheets are highest in quality and should be used wherever a highly rust-resisting and durable material is required. Accept no substitute. Look for the stencil with the added Keystone—it indicates that Copper Steel is used, and insures service and satisfaction. Sold by weight by leading dealers. Our "Better Buildings" booklet is sent free upon request.

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Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and thru the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Bean in Teat

Would like your advice in regards to a cow I have. She came fresh two weeks ago but did not give any milk and it was not until two days later that I succeeded in opening up one teat. The calf lived four days and I let it suck that teat. After it died the teat stopped up again and I could do nothing. Bag is very large but not very sore now. She had trouble with one teat last fall. It got plugged up and there was a lump in it. It was very sore. There were lumps in two other teats and one teat did not come in last year. Lumps are still in teats but did not seem to interfere with flow of milk before. Her appetite is good. She is in pasture all day and at night I feed milo maize fodder and hay. I distribute a good sized forkful between five cows in their stall. Is milo maize too rich for pregnant cow? Would like to know as I have three other cows coming fresh soon.—H. E. G., Pinneo, Colo.

(1) Your cow is evidently affected with "bean in teat," or stricture. Have a competent veterinarian cut out stricture and insert milking tube until the teat heals up. I am afraid the cow will be useless for dairy purposes. You had better fatten her for beef. (2) It would not be well to feed your pregnant cows too much milo maize, as it might be injurious to them. Better give them some kind of succulent feed or a mash—something that is not too heating.

Cabbage Lice

Will you kindly tell me what to do for aphis on cabbage, or cabbage lice?—R. D. Churchill, Idaho.

Perhaps the most practical remedy is to spray the plants early in the season with a mineral poison such as paris green or arsenate of lead. After they have begun to head applications of white hellebore are considered preferable.

Crop on Sod Land

As I am going to break about 400 acres of dry land near Billings, Mont., and am very anxious to plant about 100 acres of it to crop that can be sold when threshed as I cannot stay there to feed anything to stock, what would you advise planting—Mexican beans, flax, spring wheat or barley, and how would you advise handling the sod before planting? Of course I don't like to plant so soon after plowing, but I have almost got to get in a little crop. In the fall I expect to plant it all to fall wheat.—B. F., Loveland, Colo.

Either Mexican beans, flax or barley should do well, providing you have a favorable season and you properly prepare the seed bed. I would suggest that you disk the ground thoroly and then break and turn the soil 8 to 10 inches deep. You would be taking a chance with spring wheat, but if your soil contains sufficient moisture and the season is favorable you might get a fair crop. Barley is more sure and Mexican beans are regarded as a sure dry land crop, provided it receives the right attention. It might be well for you to diversify your crops and plant some to Marquis spring wheat, some to barley, some to beans and some to flax. In this way you would be more certain to get an income than if you were to plant it all to one crop.

Acute Indigestion

I have a calf that took very sick Friday. Seemed to want to lie on his back and was suffering very much; got better by evening and next morning was up and drank some milk but has been getting worse ever since. At first he seemed to have a lame back and now he can't get up without help and can only stand up a little while, when his hind legs give away. Some of the time he lies with his head twisted over on his back and nose towards his tail. The calf is five weeks old and was quite fat. Fed him ¼ whole milk and balance swim milk with a tablespoonful of cottonseed meal. Have given him two doses of raw linseed oil since sick. Can you tell me what is the matter with the calf?—J. A. P., Kremmling, Colo.

From your diagnosis I infer that your calf is troubled with acute indigestion. Linseed oil is most too strong a physic for a young calf. Give 4 oz. of glycerin.

Short Teats

I have a cow that has just come in fresh and her second calf and her teats are so short I can hardly milk her. Can you tell me what I can do to lengthen them?—E. S., Utah.

Nothing can be done. She will not make a profitable dairy cow; better fatten her for beef.

Wet Land Crops

(1) Which will thrive better in wet land, oats, barley for wheat?

(2) Which will stand more drouth?

(3) Which is better for hog pasture—oats or barley—to run the hogs in when it is about six inches high—F. A. M., Conejos, Colo.

(1) If your ground is quite wet and alkali comes to the surface as a result you will hardly be able to grow anything satisfactorily until the ground has been drained. Neither oats, barley nor wheat will do well on wet land. Of course, if the soil is simply damp and holds the moisture without being too wet, either one of the above crops will do well.

(2) Neither one of the above crops is drouth resistant and it would depend on when your dry weather comes, which of the crops would be more resistant to drouth. All of them require considerable moisture in order to properly mature.

(3) There is little difference between oats and barley for hog pasture, but perhaps oats would give you more forage. Would suggest that you plant rye for hog pasture.

Polypus

I have a horse that seems to have a disease in the nose or that is about what I would call it. It seems as tho he might be blowing his nose like most horses do when the flies bother them, but this horse is the same all the time. Whenever I hitch him up and start off with him, probably for the first quarter of a mile it is a continuous snorting or blowing of his nose. I get tired of hearing it and have tried to break him of it. Would like to know what is the matter with him and what would cure him of it.—J. H. B., Goodpasture, Colo.

Your diagnosis seems to indicate that your horse is troubled with polypus, which is a small tumor several inches up in the false nostril, or it may be an irritant in the nasal cavity. Have your horse examined by a competent veterinarian, as an operation is doubtless necessary.

A Kicking Cow

Can you tell me if there is anything that will stop the stream of milk from spreadnig when it leaves the teat of a cow? Sometimes the stream is perfect, other times it spreads into a mist. Is there any way to cure a cow from kicking?—E. McG., Gypsum, Colo.

The condition you speak of is probably caused by a loose flap or tongue of skin at one side of the opening. This might be removed with the point of a knife or with some sandpaper, care being taken not to hurt the teat of the cow or draw blood.

To stop a cow from kicking the best remedy is a strong 2-inch leather strap with a buckle which is buckled around the hind legs just above the hock in the form of a figure eight. Buckle this tight enough so that it cannot be slipped over the hocks if the cow starts to kick or tries to. Notice first whether there is any soreness of the teats which might cause her to kick and remove the cause if any is found, being quiet while around the cow if the trouble is nervousness. I have known bad kickers to be cured after two or three weeks' use of the strap around the hocks. Do not punish the cow for kicking, as this is likely to make her worse.—Charles I. Bray, Colorado Agricultural College.

Farcy

I have a mule that keeps having boils. Let me know what to do for it.—C. A. Willard, Colo.

The diagnosis points strongly to farcy, which is a contagious and fatal disease. Better have a veterinarian examine the animal at once.

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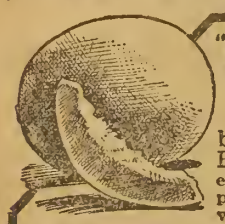

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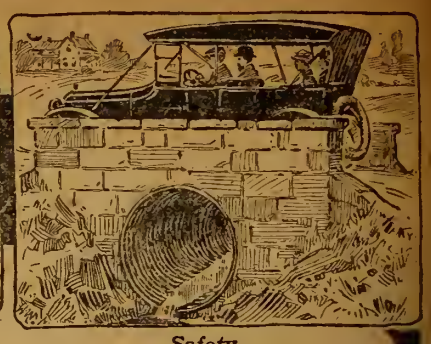

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An Economic Problem

While the cost of nearly every necessity of life has been steadily increasing, the rates for telephone service have remained practically the same.

The buyer of foodstuffs, although paying much more, receives but sixteen ounces to the pound. On the other hand, the telephone user is constantly receiving more and better service and paying the same or even a less rate than he did a few years ago.

Gradually the value of telephone service has been increased by a constant increase in the number of telephones added to the system and by improvments and refinements in the telephone art.

Steadily, too, the cost of every piece of equipment and of all supplies, copper wire, iron wire, poles, hardware, etc., used in the business of furnishing service, has increased enormously.

In other words, our revenues have not increased in proportion to increased value of the service or in proportion to increased cost of furnishing the service.

This presents a serious problem in which the public and the Company are mutually interested.

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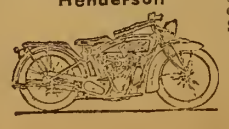

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Good Advice for the Cow Feeder

HINTS ON HANDLING THE DAIRY HERD

W. J. HARSHA

THE dairy farmer, according to Sir Walter Scott, used to be called the "cow-feeder" in Scotland. It may be that this name is still given to him. No more fitting name could be employed. For, in the dairy barn, the feed's the thing. And the manner as well as the intelligence of the feeder come into play. No matter how good your herd is, the returns will not be what they should be if you are not on the feeding job with generosity, skill, wise adaptation and regularity.

Dairying in the great Rocky Mountain region, apart from city centers, is, so far as my observation extends, a rather hap-hazard thing. The big cattlemen pay little or no attention to it. The new homestoader is too busy or too illy prepared in the way of buildings and crops to give it scientific attention. Bossy falls between the two chairs. Outside of the suburbs of cities she is left largely to pick up a precarious living as best she can. In the summer, pasturage alone is her lot; in the winter hay alone, and not the best of hay at that on some ranches.

Everyone knows that the cow is at her best as a milk-producer about the end of May or the first of June in our latitude. Now, why is this? The answer is very simple. She is on pasture then. Grass is abundant and palatable. She is able to find a more or less balanced ration, tho in this the farmer ought to help her. Her food is succulent, full of water. Other available waters, in ponds and creeks, are at proper temperature for enjoyment and milk production. The airs of the day and the enclosures she occupies at night are of moderate temperature. Lastly, she is contented, her mind is at rest, she is in comfortable surroundings for all the twenty-four hours. These are the ideal conditions for milk-making—these five things: (a) an abundance of palatable food; (b) a balanced ration; (c) succulent food and enjoyable water; (d) moderate temperature; (e) comfortable and restful surroundings. And the aim of the careful cow-feeder is to imitate so far as possible these summer conditions the whole year thru.

Changing to Pasture

On all of these points an abundance of advice and suggestion has been given you from time to time. But I venture to mention a few particular points that have not been touched upon and that appear to me important and especially needed in our region of country.

The wise cow-feeder will not change the ration of his cow too suddenly. Even the turning of a herd out to grass in the early spring should be done gradually, both for the sake of the grass and to insure the best results from the cows. We are all too eager to welcome the time when a herd may be put on pasture. The labor and the expense of winter feeding are then at an end. But we ought to go somewhat slowly in making the change from dry to grass feed, especially with cows that are heavy milkers. Young, immature grass is largely water; only a small amount of dry sustenance is found in it. A cow that has to eat 75 per cent water to get 25 per cent solid nutrients that are necessary for milk making has a day's job on her hands. She will have to crop and assimilate fully 100 pounds of grass to get the required food material. And this is a task not only, but also a danger. A cow may come in from pasture with an impacted stomach under these conditions.

Moreover, the change from barn feeding to pasture feeding should be made gradually because of the effect on the taste of the milk. We all know what a "cowey taste in the milk" means. This is produced largely by the hurry we are in to stop grain feeding or good sweet hay feeding in order that the cow may get at once to grass. If this change is made gradually this "cowey" taste is hardly noticeable. Continue your stable feeding in the spring unchanged, turning the cow out for only a short time daily at first, until the cow herself indicates that she is getting enough solid nourishment from the pasture to do away with portions of the stable supply, and lessen this latter accordingly.

Don't Forget the Grain

Then I observe that the most of us out this way do not do as much grain feeding in connection with even full pasturage as we should. To be sure, the value of this depends on what kind of a cow we have. A cow that gives only a small average quantity of milk will not give much more if fed grain when on pasture, and it is economy to let her graze without other feed. But a cow that is naturally a heavy milker should have some grain; she cannot do her best on pasturage alone. Experiments with such cows have given the following results: A Jersey cow giving 20 pounds of milk daily should have 3 pounds grain; if she gives 25 pounds milk daily she should have 4 pounds grain; 30 pounds milk, 6 pounds grain; 35 pounds milk, 8 pounds grain; 40 pounds milk, 10 pounds grain. Holstein, Shorthorn and Ayrshire cows should have the following feeding: If they produce 25 pounds milk, 3 pounds grain; 30 pounds milk, 5 pounds grain; 35 pounds milk, 7 pounds grain; 40 pounds milk, 9 pounds grain; 50 pounds milk, 10 pounds grain.

Another matter of importance. When the dry, hot weather comes, pasturage stops growing, grass becomes stiff and woody and lacking in both succulence and nourishment, cows are tormented by flies, water may be scarce and the result is that bossy has to walk long distances both for a drink and for enough to eat to supply her milking needs. Milk production falls off. And this just when the creameries are ready to pay decent prices for cream. Then is the time for the farmer to become the wise cow-feeder. For one thing, if the sun is hot and shelter scarce in the pasture and flies very eager and hungry, I think the thing to do is to keep the cows in the stable all day, or a part of the day, and let them go to pasture at night. And this is a thing we have not given attention to as much as we should; we should have ready an abundance of just right crops for soiling purposes. Crops for soiling should be neither too young nor too old. In order to effect this we should look ahead and have ready a succession of crops for bossy so that for part of her feed in the dry summer she may eat of the best. Partial soiling in a cool, dark barn in fly time will mean, in many if not all cases, the difference between little return and big returns from our middle and late summer cream.

Valuable Soiling Crops

As to what we can grow in our region that will be best for soiling, I need scarcely mention alfalfa, its advantages of rapid growth, number of cuttings available and abundant milk-production are well known. Then there is Dwarf Essex or the new Victoria rape, a very succulent feed and safe if properly handled. Then there is sorghum, which is more valuable than any corn, except the Evergreen sweet corn, for soiling. In many sections of our territory Evergreen sweet corn will grow. It is rapid of growth, short in stand, small of stalk and these are advantages, for in the feeding there is little waste. Cows take to it with avidity.

For a mixed crop I do not think we can do better than to plant oats and peas. To be sure, the ordinary Canada field peas are not as eagerly eaten by cows as we might wish, but we have the Spanish grass pea to put on trial. It is said to be just the thing for dairymen. These peas should be sown broadcast and disked in about six days before the oats are sown. A succession of this mixed crop may be obtained by sowing at intervals of about three weeks. The mixture is one of the best available to us for soiling purposes.

Alfalfa in High Altitude

What is the best alfalfa to sow for a high altitude and how much seed to the acre?—N. A. L., Bailey, Colo.

I would recommend Grimm alfalfa, 10 to 12 lbs. to an acre, according to moisture conditions.

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The New 1917 De Laval

And now, in the De Laval machines for 1917, a number of new and still further improvements have been made, which make the De Laval machines of today much better in many respects than they have ever been before.

Their capacities are greater per dollar of cost; they skim cleaner under the more difficult conditions of separator use; they are equipped with the most improved speed regulator, thus insuring the proper speed necessary for complete separation; they are even better lubricated, and the bowl construction is even more sanitary than ever.

In other words, superior as the De Laval machines have always been to all would-be competitors and utilizers of abandoned De Laval features, the De Laval machines of 1917 are improved and superior in every way to all previous types and models of De Laval construction.

All these improvements and new features are described and explained in the new 1917 De Laval catalog now ready for mailing, but some of them are difficult to describe and make fully understood by words.

Be Sure to See a New De Laval

The new De Laval machines themselves best explain their new and superior features, and their use does this more completely and convincingly than even an examination of them. Every local agent is glad to afford opportunity for examination, and better still, for home test of a new De Laval machine.

But the demand for the new machine is a month ahead of the possible supply under the present difficult conditions of manufacture and freight distribution. More De Laval machines by half have been made in 1917 than ever before, but the De Laval Works is now ten thousand machines behind actual orders, and the demand is ever increasing.

Hence the importance of securing a machine quickly if your local dealer happens to have one, and of ordering well ahead if he does not. And likewise, the importance of waiting patiently a little for a machine if need be.

A new De Laval catalog will be gladly sent on request, and if you don't know your nearest local agent, please simply address the nearest De Laval main office as below.

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Let us prove that you can sell your milk for three or four times as much as Calf Meal costs, and turn your calf loss into a profit. Order 100 pounds through your dealer or direct. Use it 30 days. If you are not satisfied that it does what we claim, return unused portion and your money will be refunded. It costs less to feed than any other standard meal or home mixture. Contains all nutriment necessary to keep the calf in good condition. Promotes healthy growth of meat and bone. A little added to poultry mash will make chicks grow quicker and hens lay better. Call on your dealer or write today for free sample.

ADY & CROWE

1900 Fifteenth St. Denver, Colorado

Dairying and Hog Raising

GEO. E. MORTON

Free advice on the commercial or technical features of dairy farming and hog production. Please address your letters to DAIRY DEPARTMENT, WESTERN FARM LIFE, DENVER, COLO.

THE editor of this department recently returned from a trip thru Western Utah and was very favorably impressed with the future possibility of dairying in some of the valleys of the southern and southwestern parts of the state. At present, with railroad facilities poor and price of hay and grain unusually high, there is not much incentive to start either dairying or livestock feeding in these valleys. But we must all recognize that present prices for feed stuffs are abnormal, and if we are to use livestock as the means of keeping up the fertility of our soils we must stay in the business year in and year out, regardless of temporary fluctuations in feed stuffs.

The dairy situation in remote valleys will probably resolve itself into marketing thru cheese factories and small condenseries. Cheese stands shipment by wagon much better than butter, and there is a very good profit in cheese year in and year out on Western markets.

Protection of Western Cheese

If cheese factories in such valleys as these are to be made a success and those established during the last few years in various sections of the West are to be aided in building up their business, good cheese must be protected against skim milk cheese. There is an attempt to do this in Colorado in a bill before the legislature which was in session at the time this was written, providing that cheese containing less than 50 per cent butter fat shall be sold as skim cheese and must be conspicuously branded as such on the exterior of the cheese itself, upon the container, and upon the package in which it is sold.

The law would work no hardship on legitimate business, requiring only that a poor quality product which is masquerading simply as "cheese," or as "Colorado cheese," shall be sold to the consumer for what it is. There is on the Colorado statutes at present an inadequate provision for the branding of Colorado made skim cheese, but nothing protecting good Colorado cheese against skim cheese manufactured outside of the state. Such legislation has been found necessary to the development of the cheese industry in Wisconsin, Minnesota and Iowa, and we are finding it just as necessary in our mountain dairy regions.

Dairying Near Salt Lake City

I have been familiar for some years with the development of dairying on the irrigated farms near Salt Lake City and was pleased to renew my acquaintance again with dairymen of that district. Some of the best Jersey herds in the West are to be found in this region. The Jersey has had behind it here a good many enthusiasts who have maintained a healthy rivalry and built up their herds with much good blood from the outside. Some of Noble of Oaklands, Viola's Golden Jolly, and the Hood Farm sires, are heading herds in this region.

I wish it were possible for Utah and Colorado breeders to get together for at least one show a year, as I believe it would stimulate their breeding operations and help produce that rivalry that is so necessary to the betterment of our herds. Possibly an arrangement might be made by which the Utah breeders would ship in to the National Western Show at Denver one year and the Colorado breeders to the Salt Lake Show another year.

Prevent Sows Eating Pigs

I would like to know if feeding ¼ pint tankage, 1 pint oilmeal, 2 pints bran as a slop would cause sows to eat their pigs. I had a sow farrow ten nice pigs February 9th in a good warm pen and up to date has but one left. It seems she mashed them first then ate them. I have shelves all around the pen for pigs to get under but she would lay on them. She is deaf but has always raised 6 to 8 pigs before. Please let me know through your Service Department what to do in this case.—B. H. Booen, Kiowa, Colo.

This trouble is usually due to feverish condition of the sow caused by constipation. The sow usually gets her first taste of the pigs by eating a dead one, and it is almost impossible to cure her. If one has green grass to turn out on it may be stopped, but at this time of the year about all that can be done is to take the pigs away from her and put them with her to suck. You should aim to prevent this condition by feeding the sow rolled oats on a feeding floor or on hard ground for a week or two prior to farrowing, thus forcing her to take exercise. Do not pen her up any length of time prior to farrowing. It is common practice among a good many men to shut their sow up a week or two before farrowing in a much smaller pen than the one she has previously been running in. This is almost sure to result in digestive troubles and frequently it results in the pig-eating habit. If the sow is feverish and constipated at farrowing time give her a dose of epsom salts in her feed prior to farrowing. If she will not eat the feed with the salts in, then take an ordinary small syringe and inject three or four tablespoonfuls of castor oil into her mouth far enough back so that she is forced to swallow it. Do not feed the sow much of anything right after she has farrowed. Give only water colored with a little shorts or bran. This should be the policy for 24 or 48 hours, depending on how soon the fever leaves her udder or whether she is coming to her milk.

Dry Barley or Wet

Which is most profitable to feed hogs, dry rolled barley or to mix it with water to make a slop?—R. P., La Jara, Colo.

There is practically no difference in the feeding value of dry rolled barley or slop made from such barley. It is entirely a question of convenience in feeding. In windy weather unless you have very well protected troughs there is very liable to be some waste with the dry barley. Also some water has to be given hogs and they should have pure water whether they get swill or dry feed, but it is not necessary to supply them with so much water when they are getting wet feed.

Removing the Tusks

Can you direct me in detail as to how to remove the tusks from small pigs? I have been told that this will prevent them from making the sows teats sore, also from injuring each other if they fight.—A. B. C., Wellington, Colo.

Secure a small set of cutting pinchers, preferably with the cutting blades on the side instead of the end of the jaws. A pair about five inches long will be right in size. Nip the tusks off close to the jaws of the pigs. Removing the tusks in this way should always be practiced. It not only prevents soreness of the sow's teats caused by the teeth, but these slight cuts in the teats are very often the means of entrance for the germ that produces sore mouth in pigs and a very frequent means of spreading this disease is by the sore mouth contagion (necrotic stomatitis) being transmitted to the udder of the sow and then spread to the suckling pigs.

Oats and Field Peas

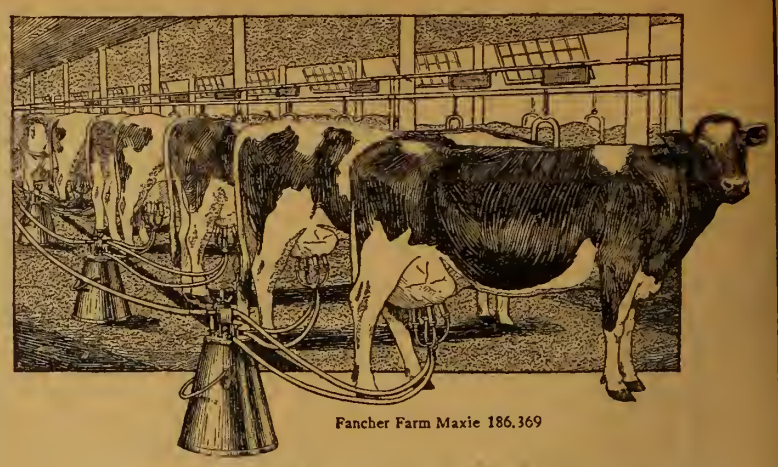
With what success can oats and field peas be grown mixed? Is it good feed for calves and cows with calves? How much to the acre will it grow in a good season? How much of each should be planted to the acre?—G. F. V., Colorado.

Oats and field peas do well together. This mixture has been grown in the San Luis valley for a good many years. It has been a popular crop in northern Wisconsin and Minnesota. The oats serve to keep the field peas from lodging. If cut when the oats are in the dough it makes first-class hay. The yield per acre will of course depend upon the soil, irrigation, and section of the state. I presume you plan to grow the crop on irrigated land and you should get two or three tons per acre on the average. On strong irrigated land, seed 12 lbs. oats and 48 lbs. peas per acre.

Rape for Hog Pasture

I want to ask you a few questions on planting dwarf essex rape for quick summer hog pasture. Will it do well at an altitude of 7,000 feet? What kind of land is best? Our place is fine for alfalfa and potatoes, and all kinds of grain do fairly well. Sometimes the early frosts are severe enough to nip the wheat. I want to plant something to turn the hogs in and alfalfa takes too long. I see so much about rape, I would like to try it. Land is gravelly but have lots of water.—B. E. R., Chaffee County, Colo.

The dwarf essex rape is a very good pasture for hogs in the corn belt. At 5,000 ft. altitude and up it is not so satisfactory, because it makes a much smaller growth in these regions on account of the shorter season and cool nights. In an experiment carried on by the writer, rape did not produce as much pork per acre as alfalfa when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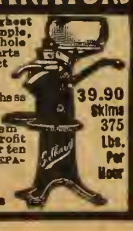

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some grain was fed both with the rape and alfalfa. I would not advise growing it for hog feed at 7,000 ft. Rye would make a better annual pasture and this could be followed by alsike clover pasture if you have it and later by turnips, which make a fine fall feed for hogs. If you wish just an annual crop to turn the hogs in on, I would use rye for the yearly pasture and peas and oats for hogging off after the rye pasture is done. At Fort Collins rape is not ready to turn in on until late July and does not make a very strong second growth after it has been pastured off once.

How to Build a Pit Silo

Continued from Page 4

For this purpose, an old plowshare is good. The walls can be trimmed perfectly smooth and perpendicular with this device, but with care the walls can be kept straight without it.

The trimming should be kept well up with the digging to prevent throwing the dirt out from a greater depth. After the silo is completed the collar at the top should be extended at least one foot above ground level to prevent surface water from running into the silo. This may be built up later with bricks, concrete blocks or solid concrete to a height of four or five feet above the level of the ground. If the walls are made higher than this it will be difficult to take the silage out with a block and tackle. A lot of dirt taken out of the pit may be graded up around the silo so as to bring the ground level up three or four feet.

Plastering the Pit Silo

For best results, the walls of a pit silo should be plastered, to prevent caving in. Pit silos can be used without plastering, but are not satisfactory after one year's use. The plaster should be made of one part cement and two and a half parts sand. Before it is put on, the wall must be well dampened. A spray pump, sprinkler or old broom can be used for dampening the walls. The second coat of plaster can be applied immediately after the first, but in case more than two coats are to be put on, the first coat should set a few hours. Two coats are sufficient in heavy clay soil, but if the soil is sandy or gravelly, three to five coats should be used. The thicker the wall is plastered the nearer will the silo approach being everlasting. To save scaffolding and to avoid caving in of the walls before the pit is dug, it is best to plaster each section six feet deep before digging further. As soon as one section is plastered the next can be dug and plastered. It is not advisable to go more than twenty feet deep.

There are several good methods of removing silage from pit silos. For a small herd, and where the silo is near the place of feeding, a hand-over-hand pulley with a rope and two baskets is all that is necessary. Each basket should hold about enough silage for two cows. With a hook on each end of the pulley rope, one basket of silage can be raised while the empty basket is lowered. For a greater number of stock, a large box holding from 400 to 500 pounds of silage should be used. This must be raised by the use of block and tackle or windlass. The bottom of the box should open on hinges and let the silage fall in a trough or wagon. An elevated track, such as a hayfork track, can be arranged to carry the silage to the feed troughs. With either of these methods it will require little more labor to feed from a pit silo. By using the horse fork rope the silage is elevated by horsepower instead of by manual labor. These arrangements can, of course, be used for taking the dirt out of the silo when digging, as well as the silage.

Moisture and Crop Conditions

Continued from Page 3

acreage winter wheat; precipitation below normal. Have not had much snow, but ground in fine shape. If we do not have winds during spring, conditions will be good.—First National Bank.

Genoa, Lincoln County.—Precipitation a little above normal. Wheat covered most all winter. Larger acreage than usual. About six inches snow this week puts soil in excellent shape. Farmers will be able to get in fields as soon as snow is off. Prospects very good.—State Bank of Genoa.

Haxtun, Phillips County.—Wheat came thru fine; precipitation about normal. Not much snow first part of winter, but good at present time.—Bank of Haxtun.

Calhan, El Paso County.—Very little winter wheat here. Moisture light; some damage by blowing.—First State Bank.

Ramah, El Paso County.—Precipitation about normal. Wheat came thru in fair shape. Some damage by blowing. This month have had plenty of snow, which put the ground in fine shape.—State Bank.

Simla, Elbert County.—Wheat came thru well. Precipitation below normal. Good snow during March. Conditions very favorable for spring.—State Bank.

Kiowa, Kiowa County.—Precipitation below normal. Some damage from blowing. Ground dry except for light recent snow.—Kiowa State Bank.

New Raymer, Weld County.—Non-irrigated section; wheat came thru all right. Precipitation above normal. Winter wheat acreage from a third to a half larger than usual. Moisture plenty and prospects so far fine.—State Bank of Raymer.

Wray, Yuma County.—Wheat came thru fine. Precipitation about normal. Acreage larger than ever before. Had good snow this week, which will do much for winter wheat. Prospects at this time good.—First National Bank.

Yuma, Yuma County.—Wheat came thru fine. Precipitation about normal. Have had considerable moisture since first of year and ground in fine shape at present. Good prospects indicated for spring.—First National Bank.

Akron, Washington County.—Wheat came thru in good shape. Precipitation a little less than normal. Very little damage from blowing.—First National Bank.

Stratton, Kit Carson County.—Precipitation short; not much snow till March. Larger acreage winter wheat than usual. About ten inches wet, heavy snow recently and ground now in fine shape.—Stratton State Bank.

Flagler, Kit Carson County.—Wheat coming thru fine. Precipitation a little above normal. No blowing damage so far. Acreage of winter wheat about normal, but there will be a large acreage of spring wheat sown. Ground wet at present and prospects good.—Farmers' Bank.

Peyton, El Paso County.—Wheat in good shape; precipitation better than last season. Good snow within last ten days and moisture conditions at present are fine.—J. W. Dickinson.

Hugo, Lincoln County.—Winter wheat in good condition; precipitation about normal. No blowing damage so far. Wheat acreage large and moisture conditions for spring very good.—Hugo National Bank.

Julesburg, Sedgwick County.—Wheat came thru the winter in fairly good shape. It was rather dry the first part of the season, but we have had considerable snow in the last month and wheat is covered at present with 12 to 18 inches. Do not think there has been any damage from blowing. The acreage of winter wheat is larger than ever before.—Citizens' National Bank.

Roggen, Weld County.—Precipitation fully normal. Wheat had snow most of the winter. Ground in nice shape when it thaws, but weather keeps too cold to allow any work, thawing a few days, then freezing again.—Roggen State Bank.

Lamar, Prowers County.—Winter wheat has come thru in good shape on the irrigated lands. Rather dry at present, but there is plenty of water in the river and in the reservoirs. We have had very little snow. Damage from blowing so far has been light.—Citizens State Bank.

NORTHERN COLORADO

Loveland, Larimer County.—Winter wheat in fine shape. Precipitation above normal. Not much blowing damage. General conditions good for both irrigated and non-irrigated crops.—Loveland National Bank.

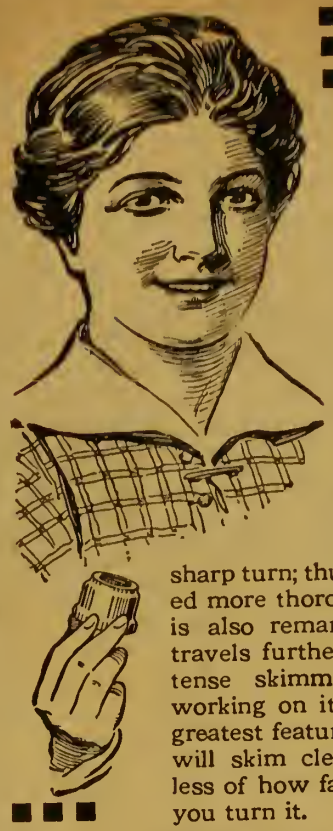
Littleton, Arapahoe County.—Winter wheat so far in good shape. Precipitation a little under normal. About half is irrigated and half non-irrigated. General prospects good at this time, tho plenty of time yet for high winds or other factors to completely change the situation.—Littleton State Bank.

Timnath, Larimer County.—Precipitation above normal. Winter wheat in fine condition and spring prospects very good.—Farmers' Bank.

SOUTHEAST COLORADO

La Junta, Otero County.—Winter wheat (irrigated) came thru fine. Precipitation about normal. A little damage from blowing. Acreage about the average. Condition on range is dry, but plenty of water for the ditches.—First National Bank.

Hartman, Prowers County.—Wheat in good shape, but acreage limited. Have had no rain for months, but plenty of water for irrigation. Prospects normal for the irrigated sections.—Hartman State Bank.



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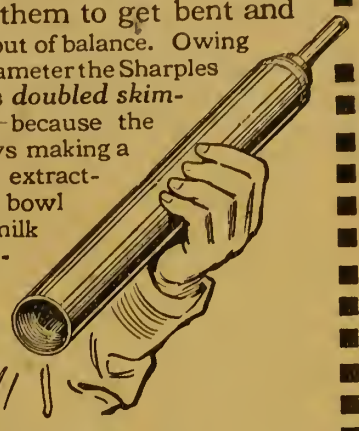

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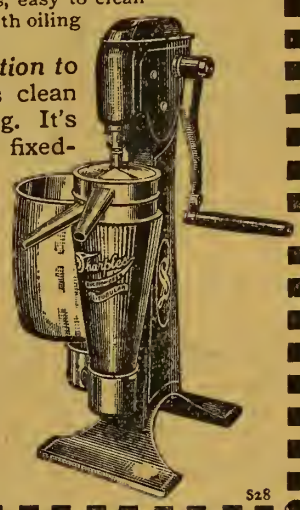

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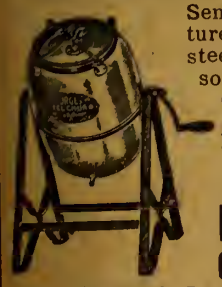

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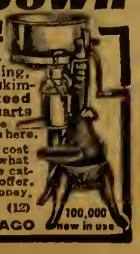

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The Farm Home

MRS. H. T. FRENCH

Questions about home problems promptly answered by letter and thru the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

APRIL

Gray boughs shake their bud-tipped lances;
In among them sunlight dances,
Bonny lass, a-weaving fancies,
April comes a-blowing.

Maid with eyes of heaven's azure,
Brow adrift with white cloud's treasure,
Wanton tresses at her pleasure,
April comes a-blowing.

Nature's wealth of summer glory
April sings in wayward story,
Sporting with Time's locks, all hoary,
When she comes a-blowing.

Promise over meadow sowing,
Ice-locked rivers will be flowing,
By bare fields to harvest growing
When she comes a-blowing.

In her arms I pray she hold me,
To her warm brown breast enfold me,
In her winsome sweetness mold me,
When she comes a-blowing.

—Marie Sexton.

Again the month of resurrection! All nature smiles and is glad, typifying the analogy of the spiritual world as all dead matter comes forth from the dark clods of earth into new beauty and life.

Once more at the return of spring the economy of nature is exemplified as each minute bit of plant organism awakens to perform the part in life for which it was created.

Let us, every man, woman and child, apply the lesson taught by nature—renew our spiritual life, putting aside all our dead selves, forgetting the past or anything that hinders true progress. Let us humbly resolve to "Rise on stepping stones of our dead selves to higher things".

EASTER DAY

A song of sunshine thru the rain
Of spring across the snow,
A balm to heal the hurts of pain,
A peace surpassing woe.

Lift up your heads ye sorrowing ones,
And be ye glad of heart,
For Calvary and Easter Day,
Earth's **saddest** day and **gladdest** day,
Are just one day apart.

THE CHILDREN'S GARDEN

Now that the busy season in farm and garden is fairly with us, we want to make a plea for the little people, that the children.s garden be not forgotten.

It has been urged before, and we wish to insist again upon the importance of setting aside a small plat of ground where the boys and girls can raise a variety of vegetables, especially those that can be entered for exhibition at the next fair—encourage them in every way possible to do this, for the experience gained will be most invaluable, even if a single prize is not gained.

And plant for the babies a little garden for their very own, to pluck the flowers whenever they may wish.

Write the name of your little girl in the garden and plant in it the seeds of some small, fine-foliaged annual, and see how delighted she will be when she sees her name in letters of living green.

The Earlier Spring Flowers

Aside from the bulbs among the earliest of the spring flowers are the viola, English daisy, pansy, violet and forget-me-not. Each one of these, with the exception of the violet, may be very easily started from seed, should live over the winter and should be in bloom by April 1. The violas are grown exactly like pansies, and though they rarely live over the second year, they self-sow so that one may always have plenty of plants.

Among English daisies there is a very large flowered variety, about the size of a quarter, with a long strong stem that makes it desirable for early spring boquets. The daisy increases rapidly and the plants may be divided. This also self-sows and spreads rapidly.

It is more satisfactory to buy violet plants from a florist if you would be sure of the large, fragrant blooms. If given a sheltered sunny spot these bloom early and profusely, though the tender varieties do much better in a cold frame. These also increase rapidly, and if left undivided from year to year fail to bloom well. I reset mine early in September for the early spring bloom.

The last of the above group, the forget-me-not, is with some the favorite of all. It does not bloom the first year from seed, but is a biennial or perennial. This also self-sows very easily and seems with me to do equally well in sun or shade. The biennial varieties of course die at the end of the second year, but usually self-sow enough during the summer and fall, so that they are ready for blooming in the spring.—R. G. P., Caldwell, Idaho.

Queries and Answers

Query 1—I would like a recipe for a clear tomato soup.—Housekeeper.

Answer—Into one quart of tomatoes cut two or three stalks of celery. Slice and fry together to a light brown in butter, one potato, one onion, one turnip, and one carrot. Add these to the tomato and boil forty minutes. Strain and season with salt, butter and a dash of cayenne, adding a little water if it has boiled down. This should serve eight people in bouillon cups.

Query 2—A request comes from a correspondent for recipes suitable for the casserole bakers, especially how to utilize left-overs in the use of these dishes. The casseroles come in the dainty, individual size, and also in family size, and the recipes given can be as well used in one as in the other.

Often, after a dinner, where turkey or chicken have been served, a small portion is left—hardly enough for another meal, yet quite too much and too good to be thrown away. Pick all the meat carefully from the bones, discarding all skin, and cutting in quite small pieces. Now put alternate layers of cracker crumbs and meat in the casserole, seasoning with salt and pepper, with bits of butter over the top, adding sufficient milk to moisten well before putting in the oven.

Or a white sauce may be made by putting a generous tablespoon of butter and an equal quantity of flour in a basin, mix well, add salt and pepper, and lastly a cup of warm milk, stirring until it is cooked smooth. Double this recipe if the quantity is not sufficient, and add this to the diced chicken or turkey, put in the casserole and bake in the oven.

The remains of baked halibut or salmon are especially nice prepared in this manner, and veal is very good.

The dried codfish, shredded and cooked in water for a short time, this water poured off, then put in the cream gravy and baked in the casseroles, makes a fine supper dish.

Note—We are very glad to hear from so many of our readers since the last issue and hope the interest in the home columns will increase with each succeeding number. Some very interesting correspondence will be published in April 15th issue.

How to Make Soft Soap

Perhaps there are a few housewives who have a dripping pan full of "cracklings" left on the pantry shelf ever since the lard was rendered. Or it may be that quite an amount of suet or ham drippings have accumulated and become too rancid to use for frying. These will make splendid home-made soap and it is thru such small economies as making enough soap to use in scrubbing, etc., that we can help cut down the high cost of living. The following is a tried recipe:

Place three gallons of cracklings in an iron kettle. Add water to cover, and for each gallon of cracklings add one slightly rounded tablespoonful of powdered lye. Bring to a boil and let boil two or three hours or until all is dissolved except the little scraps of lean meat. Pour the mixture into a wooden tub thru a fine sieve or piece of wire screen and let stand over night or until cold, when the grease will be on the surface and the watery substance below. Now skim the grease off and return it to the kettle with a bucket of water, let come to a boil, and set off to become cold again. When cold, make a hole thru the grease at opposite ends of kettle and draw off water. The grease is now white. Melt the grease and follow directions found on the can of lye. If grease and lye do not mix readily at first, let stand five minutes, then stir well. Repeat the stirring every five minutes until the mixture is the consistency of thick mush. If the temperature of grease and lye is not according to directions they will not mix. The grease will be on top and the lye under to a depth of one to four inches, but if stirred well and often as it cools, it will mix nicely.—Miriam M. Haynes, Colorado Agricultural College.

Judicious Management

Purchasing food supplies and planning and preparing three meals a day has always been a problem, but with the increase in food prices the problem is becoming more difficult every day. The abnormal price of certain foods leads the careful housewife to seek substitutes, but if she does not know the relative values of the different foods she cannot make her substitutes intelligently. A knowledge of the part that each of the different classes of foods performs in the body upkeep is essential. Without this knowledge serious mistakes may be made. Miss Bab Bell of the Missouri College of Agriculture makes a few suggestions relative to decreasing the cost of living.

(1) Make a thoro study of the different classes of foods and the function of each in the body.

(2) Plan meals carefully so that foods are not duplicated. For instance, do not serve Irish and sweet potatoes in the same meal; cheese and meat; rice and potatoes; spinach and lettuce; navy beans and meat.

(3) Substitute in part, cornstarch for eggs; rice for potatoes; meat substitutes for meat; some good oil for olive oil; some product for butter, especially in cooking; cornmeal for wheat flour. Milk is one of the best foods and consequently can be substituted for higher priced foods. Skim milk has a high protein value.

CHOCOLATE PIE

Two cups water, 1 cup sugar, 1 half square of chocolate, 1 spoonful of flour, 1 teaspoonful of butter, vanilla flavor to suit taste.

EGG CUSTARD

One and one-fourth cup sweet milk, 2 tablespoons sugar, 2 eggs, 1 teaspoonful of flour, lemon flavoring.

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We can supply our readers with high-grade, perfect-fitting, seam-allowing patterns at 10c each, postpaid. Full directions for making, as well as the amount of material required, accompany each pattern. When ordering, write your name and address plainly, tell us the correct number and size of each pattern you want. We agree to fill all orders promptly and guarantee safe delivery. Address all orders to WESTERN FARM LIFE, Pattern Department, 14th and Arapahoe, Denver, Colo.

2004—Simple, Popular Style. Cut in sizes 12, 14 and 16 years. Requires 5¼ yards 36-inch material for 14-year size. Serge, gabardine, plaid suiting, or shepherd checks would be nice for this style. The sleeve may be in wrist or elbow length. Taffeta, corduroy or velvet are also nice for this model.

1975—Smart and Comfortable Negligee. Cut in sizes 34, 36, 38, 40, 42 and 44 inches bust measure. Requires 3½ yards 44-inch material for 36-inch size. Silk, serge, gabardine, challie, flannel, albatross, gingham, voile, repp, lawn, batiste and dotted Swiss are all nice for this style. The right front overlaps the left at the closing. The sleeve may be in either of the two styles illustrated.

Good Suit for Sport and School.—Blouse, 1982, Skirt 1992. This illustration calls for two separate patterns, which will be mailed to any address on receipt of 10 cents for each pattern. Both patterns come in sizes 16, 18 and 20 years. The blouse requires 3¼ yards and the waist 3½ yards 36-inch material for 16-year size. Both models may be of one material, or the blause may be of drill, linen or flannel, and the skirt of serge, gabardine or wash material.

1977—Smart and Practical Apron. Cut in sizes 34, 38, 42 and 46 inches bust measure. Requires 7¼ yards 36-inch material for 38-inch size. This style is especially nice for gingham, percale, alpaca and brilliantine. The front is cut in panel shape to form deep pockets over the side front.

WESTERN FARM LIFE SEWING MACHINE

Costs less than half the price of other machines. Sold on a money-back guarantee basis. We pay the freight and allow 90 days' trial. Send for FREE machine book; describes our machine in detail and explains why you had just as well save from $30 to $35 when securing a good machine. WESTERN FARM LIFE, Denver, Colo.

The Culture of Strawberries

Strawberries can be profitably grown in practically every section of the intermountain states. In fact, the plant is native to the Rocky mountains, wild strawberries being found in sheltered valleys up to altitudes of 8,000 feet. Under careful culture in the garden or as a commercial fruit, the plants in this region yield fruit of extraordinary size and fine flavor. The chief requirement is that of a moisture supply when needed. On the irrigated farm this factor takes care of itself; on the non-irrigated farm it is necessary to have a supply of water for supplementary irrigation of the garden in order to get results from strawberries., This may be provided thru windmill pumping, with a dirt reservoir for storage of water.

Water should be available for irrigating newly set plants until they are well established and also during development of fruit, in case the natural rainfall does not come at the right time.

U. S. Department of Agriculture Bulletin No. 727 says in relation to strawberries on the Plains:

"By mulching with straw during the winter to prevent repeated thawing and freezing, as well as to protect the plants from extreme temperatures, strawberries can probably be grown almost anywhere in the Great Plains, provided water can be applied during the critical periods mentioned."

Years have been spent by nurserymen experimenting to develop a variety of strawberry that would bear fruit continuously during a season and that would grow and bear good crops under the most adverse conditions. The result of this experimenting is the Everbearing strawberry. Everbearers are a hardy, vigorous plant. They will stand more cold and frost without injury than the ordinary once-a-year kinds. Even tho a freeze should be hard enough to nip the blossoms, they will come right out again and in a month's time you will have a full crop that will continue fruiting until winter sets in. With proper care the same plants will bear good crops five or six years. During the first year the blossoms should be pinched off up to July.

Some general hints on strawberry culture are given in the following from a bulletin by the Colorado State Experiment station (No. 195), by Prof. E P. Sandsten, head of the Horticultural department:

"Planting. Rows are laid off about four feet apart and the young plants are set twelve to eighteen inches apart in the row. In planting care should be observed to use only young and vigorous plants. Such plants have long light-yellowish roots, while the roots of old plants are black and should be rejected. About one-third of the length of the roots should be clipped off, and the planter must not allow the roots to be exposed to the sun. A brief exposure will sometimes make their subsequent growth very uncertain. In setting the plants, the roots are arranged fan shape and the earth carefully pressed around them, leaving the crown a very little lower than the surrounding earth, being careful not to cover it. If the ground is dry at time of planting, water should be used in the holes in which the plants are set. * * *

"Cultivation: Light surface cultivation should follow the planting. This should be given as often as is necessary to conserve moisture and keep down weeds. In July runners will start, and these should be trained along the rows so as not to interfere with cultivation. Four to six runners are as many as should be allowed to put out from one plant. Each runner should be allowed to set two, or at most three plants, all others being cut off. In humid climates these runners will take root and start new plants which will bear the following year, but in Colorado it is usually necessary to cover the runners at intervals with a small amount of earth. When winter comes on, the plants are mulched with straw to a depth of about six inches.

One of the largest strawberry farms in the country is located at Twin Falls, Idaho. The plants produced there are strong, vigorous and exceedingly productive.

Raise a Patch of These Everbearing Strawberries=PLANTS FREE

EVERBEARING STRAWBERRIES are the one fruit crop for the dry farmer. They are a big money-maker for the irrigation farmer who wants to put in an acreage. The Rocky Mountain States are their home. No other fruit crop can hope to equal them. No other is so dependable. No other surpasses them for the Western farmer.

The Everbearing Strawberry produces a crop of big, red, delicious strawberries the first season. They continue to grow, multiply and bear heavy crops for five or six years. They are particularly well adapted to our Western conditions. They thrive at all altitudes and in almost any kind of soil. The first season they commence to bear fruit the latter part of July and continue on up until stopped by severe freezing weather. After the first season they begin to fruit in May and June. A late spring frost, if not too severe, will not injure the blossoms. It takes a real "freeze" to stop them from bearing in the fall.

You cannot afford to be without a patch of this wonderful fruit on your place. You have a plot of ground in your garden, orchard, or near the house that will make you an ideal strawberry patch. Everbearers are almost as hardy as wild shrubs, just as easy to set out and get started as cabbage, tomatoes or any other garden plant. With a little care at first to get them started they will continue to grow and bear fruit year after year. A single bed (7½ ft. wide by 1 rod long) should yield about 50 pints. A double bed (1 rod square) about 150 pints.

B. Blindemuth, Boulder, Colo., has a patch of Everbearers, planted on the steep hillside in Bummer Gulch, about six miles from Boulder, at an altitude of 7,500 ft., not irrigated. Last season about the middle of July they had all the Everbearing Strawberries they could eat, and they continued to bear until the 13th of November, when stopped by a severe "freeze"—15 below zero.

Saul Peiffer, Moscow, Idaho, from a small plot of Everbearing Strawberry plants last year sold $65 worth of berries. This was the first season and his first experience with Everbearers.

HERE IS OUR FREE PLANT OFFER IN A NUTSHELL

Everbearing Strawberries are not an experiment. It is not a question of "can you" but "will you" plant some. We have already this spring supplied plants for starting several hundred strawberry patches for our readers. We want to see every subscriber of WESTERN FARM LIFE have a strawberry patch this year. We will furnish the plants for almost the asking, either in connection with your own subscription or without one single bit of expense to yourself, if you will get only a few of your neighbors interested in WESTERN FARM LIFE. A one year's subscription will get you 18 Everbearing Strawberry Plants, enough to plant a single bed. Three one-year subscriptions, 60 plants, enough to start a double bed. Five one-year subscriptions, 120 plants, enough for a big plot three rods square.

Subscription—	Plants	Amount
One year	18	$1.00
Three years	48	2.50
Three years	60	3.00
Five years	120	5.00

Just to give you an idea of what others are doing we are quoting from letters received:

"I am sending you five one-year subscriptions. Ship me by prepaid express, as per your offer, 120 Everbearing Strawberry Plants."

"I guess I am paid away ahead on my subscription, but I am enclosing $2.50 and want you to send me the 48 Everbearing Strawberry Plants and extend my subscription."

"I am enclosing $3.00 for my own subscription for one year and two of my neighbors each for one year. Send me the 60 Everbearing Plants. I am going to divide them with my neighbors."

Now, just as sure as these men have been able to secure plants and just as sure as these other farmers mentioned have been able to grow Everbearers successfully, just so sure can you do the same if you will but send for your plants. What you want is a good Everbearing Strawberry patch so that you and your family can enjoy nice, delicious strawberries all summer long. If you will plant a patch of Everbearers this spring you will have a crop of delicious strawberries just as sure as the sun rises and sets. Decide on the number of plants you want and fill in the coupon below. Get your order off to us without delay. This may be your last chance.

GET VIGOROUS HEAVY BEARING PLANTS

In choosing the plants to send you we were very careful to see that they were an unusually hardy variety, a variety that is especially adapted to the Rocky Mountain States. These plants produce a dark red berry. They are large, well shaped, and of most excellent flavor, much better than the ordinary varieties. The plant is a strong grower and makes runners freely. Fruits heavily on new runners within four to six weeks after they are rooted.

ORDER COUPON

Western Farm Life,
1402 Arapahoe St., Denver, Colo.

Gentlemen:

I want to try some Everbearing Strawberry plants this spring. I am enclosing $..... for which send me.....plants and WESTERN FARM LIFE for.....years.

Name .....

P. O..... State.....

R. F. D..... Box.....

We Prepay Charges ONLY on 120 plants

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A Western Magazine For and By Western Farmers

We Will Hurry your order for early planting

Farmers' and Stockmens' Exchange

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Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

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EGGS — BARRED ROCK, GOOD LAYING strain. Mrs. C. B. McCorkle, Albion, Neb.

WHITE ROCK EGGS—LARGE. BIG IVORY runners, $5.50-100. Mrs. Hans Greve, Central City, Neb.

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PRIZE-WINNING B. P. BABY CHIX AND EGGS. Write for mating list and prices. Mrs. C. N. Bailey, Lyndon, Kas.

WHITE ROCKS—BLUE RIBBON WINNERS IN 4 states. Write for mating list. Williams Poultry Farm, Cedar Bluffs, Neb.

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BARRED ROCK COCKERELS AND PULLETS. Also baby chicks. Barred Rock and White. Leghorn after March 1st. Green Poultry Co., Haigler, Neb. Established 1910.

BARRED ROCKS—WINNERS AT INTERSTATE Show, Sioux City, Omaha and State Show. Eggs $2.00 and $3.50, both matings. Can please you. W. J. Krieger, Tripp, S. D.

BREADWINNER WHITE ROCK SALE—HENS, pullets, $2.00, $3.00. Blood of 200 to 301 egg pens. Hatching eggs. Poorman's 200 egg strain. Chicks 25c, 50c. Eight varieties. Particulars. Doble, 2434 So. Race St., Denver.

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PARTRIDGE PLYMOUTH ROCKS — THE beauty and utility breed, stock for sale that are prizewinners. Pullets $2.00, cockerels $3.00 to $5.00 each. Eggs for hatching $1.50 and $3.00 for 15 eggs. Satisfaction guaranteed. A. R. Stover, Manzanola, Colo.

"RINGLET" BARRED ROCKS, WINNERS wherever shown. Large size, big bone, excellent quality. Both matings. Eggs: Fancy matings, $2.50 to $5.00 per 15; range flock, $1.00 per 15; $5.00 per 100. Mating list free. Jos. V. Beran, Box 374B, Verdigre, Neb.

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HEWITT'S S. C. BUFF LEGHORNS. EGGS, $1.00 per 15, 50 for $3.00, 100 for $5.00. Mrs. Philo Hewitt, Lexington, Neb.

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CHOICE SELECTED SINGLE COMB BROWN Leghorn eggs, $5.00 per hundred. Mrs. Cooper May, Garfield, Kan.

SINGLE-COMB BROWN LEGHORNS, TRIO $10.00, pen $15.00, cockerels $2.50 up, eggs $7.00 hundred. Setting $2.00. Prepaid. Chas. Bowlin, Olivet, Kansas.

SINGLE COMB WHITE, S. C. BROWN LEGhorns, bred-to-lay strains. Eggs $2.00 for 15, $3.00 for 50, $6.00 for 100. Plainview Poultry Farm, Lebo, Kans.

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EGGS FROM CHOICE EXHIBITION MATINGS. S. C. Buff, Brown and White Leghorns; every bird a winner; $3.00 per 15. Guaranteed hatches. L. P. Harris, College View, Neb.

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EXTRA GOOD SINGLE COMB WHITE LEGhorns—Pure white, low-tailed males mated to heavy laying females. Eggs $5.00 per 100; setting, $1.50. Order now. E. D. Allen, Inland, Neb.

UNIVERSITY PARK POULTRY RANCH—BABY chicks and hatching eggs. To every thinking breeder, this wonderful line-bred stock of thoro, heavy-laying Single Comb White Leghorns, which will reproduce themselves; bred to shell out eggs and do it. For sale, hens, pullets and cockerels. Send for circular. Orders taken for March delivery. Chicks from 241-egg trapnest stock, $18 per 100; chicks from 200-egg Hoganized test, $15 per 100; guaranteed hatching eggs; also settings; special prices in incubator lots, prepaid to your express office in lots of 30 or more; guaranteed live delivery. I also guarantee what I advertise. Visitors welcome. 2520 S. Clayton, Phone South 337. Denver, Colo.

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ROSE-COMB REDS—EGGS FOR HATCHING. F. Gregorius, Humphrey Neb.

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SINGLE COMB REDS. WHITE LEGHORNS and Orpingtons, free list. Glenn Davison, Grand River, Iowa.

PURE BRED R. C. R. EGGS FOR HATCHING, $1.25 per 15; $5.00 per hundred. Mrs. F. A. McGuire, Paradise, Kan.

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FERTILE EGGS, HATCHING FINE; S. C. R. I. Reds, vigor. size, color; 700 winter layers; hen-hatched, farm-raised, $6 per 100; $50 per 1,000. Mrs. J. M. Erwin, Arvada, Colo.

EXHIBITION AND HEAVY LAYING TYPE SINgle Comb Reds. We are the oldest breeders of reliable Reds in the West. 30 eggs, $2.00, or $6.00 per 100. Circular. Lower's Poultry Farm, Arvada, Colo.

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WHITE WYANDOTTE EGGS, 15 $1.25, 100 $5.50 prepaid. Herman Dierking, Bremen, Kan.

SILVER LACED WYANDOTTE EGGS $1.25 per 15, $3.00 per 50, $5.00 per 100. Mrs. H. R. Young, Stella, Neb.

WYANDOTTES—WHITE AND COLUMBIAN.—Won firsts five states. Eggs. Catalog. Templedotte Farm, Lexington, Neb.

CLARY'S "CHALK WHITE" WYANDOTTES are winners. Egg orders booked now. $2.00 per setting, $8.00 for 100. Geo. Clary, Fairbury, Neb.

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FARM RAISED WHITE WYANDOTTES—FOR over 30 years. Eggs, $3.00 per 100. W. Chinese geese eggs, 20c each. C. H. Beethe, Elk Creek, Neb.

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MY LIGHT BRAHMAS AGAIN WIN SWEEPstakes in the big 1917 Denver Stock Show. Hatching eggs for sale; prices reasonable. E. Grosser, W. 23rd and Perry, Denver.

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WHITE-FACED BLACK SPANISH, FROM THE best stock to be obtained in this country. Have sold out on stock, but can furnish eggs, $2.00 per setting, $10.00 per 100. W. W. Yale, Chickasha, Okla.

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BABY CHIX

BABY CHICKS, 11 STANDARD VARIETIES. Kansas Poultry Co., Norton, Kan.

RESERVE BABY CHICKS NOW; FROM sturdy, farm-reared Rocks, Reds, Orpingtons, Wyandottes, Leghorns; safe delivery by hundreds or thousands, guaranteed. Red Hen Poultry Farm, Hastings, Neb.

DAY OLD CHIX AT REDUCED PRICES. DElivered to your express office, all charges paid, guaranteed alive. Large strain S. C. White and Brown Leghorns, $12 per 100. Barred Rocks, R. C. Reds, Buff Orpingtons and S. C. Reds, $14 per 100. Leftovers above breeds, $10 per 100. Hatched in the right climate and in the right way to live when you get them. Edward Steinhoff, Leon, Kan.

SEVERAL VARIETIES

REDS, ROCKS, LEGHORNS, 12½c. REQUEST folder. McCune Hatchery, Ottawa, Kan.

DUCK EGGS, 75C PER DOZEN. GEESE EGGS, 25c each. Postpaid. Lawrence Mantey, Carr, Colo.

WHITE ROCK AND WYANDOTTE EGGS FROM heavy egg-laying strain. H. Werder, Hereford, Colo.

EGGS, $1.50 PER SETTING. LEGHORNS, Reds, Rocks, Wyandottes, Orpingtons. Royal Poultry Yards, Coffeyville, Kan.

FOR SALE—CHICKS AND EGGS FROM S. C. W. Leghorns and Rhode Island Reds. J. O. Bartholomew, Rocky Ford, Colo.

BARRED ROCKS, TOULOUSE GEESE AND White Indian Runner Ducks. Collie pups. Mrs. Frank Davis, Holbrook, Neb.

SINGLE COMB REDS AND BUFF LEGHORNS. Eggs for winter layers by the 100. Elmer Carson, 34th and California, Omaha, Neb.

BUFF PLYMOUTH ROCK, ROSE AND S. C. Brown Leghorns; White Pekin duck eggs for hatching. Mrs. J. D. Brown, Ft. Morgan, Colo.

EGGS FOR HATCHING—MATING LIST FREE. S. C. Buff Orpingtons, Toulouse Geese, Indian Runner Ducks. Peter Brehm, Harvard, Neb.

ALL VARIETIES LAND AND WATER FOWL, imported stock. Winners of thousands of prizes. List free. Rose Lawn Poultry Farm, Beaver Crossing, Neb.

EGGS FOR HATCHING. TURKEYS 200 apiece. Toulouse geese 25c apiece. Pekin ducks 15c apiece. Plymouth Rock eggs, $1.50 setting of 15. Mrs. C. J. Davidson, Ft. Lupton, Colo.

EGGS — ALL STANDARD VARIETIES. Healthy farm flocks of good quality, color, size. Prices right. We stand by our name. Square Deal Poultry Association, Mrs. Fern Ogilvie, Sec'y, Beaver Crossing, Neb.

EGGS—WORLD RENOWNED "RINGLETS." New York prize winners past 20 years. Pens No. 1 both matings, $3.00 and $4.00; 15, $2.00; 50, $3.00; 100, $5.00. Pheasant, $4.00 dozen. Cockerels, $2.50 Harper Lake Poultry Farm, Jamestown, Kan.

COLUMBIA HATCHERY—ALL LEADING VArieties of baby chicks, cockerels and hatching eggs. Reds, Rocks, Leghorns, Orpingtons, etc. Live delivery of baby chix guaranteed to your express office. We ship to all parts of Colorado, Wyoming, New Mexico. Write for price list. P. O. Box 1102, Denver.

EGGS, EGGS—FROM THOROBRED TURKEYS, geese, 8 kinds of ducks, Pearl and White Guineas, Barred, White and Buff Rocks, Houdans, Rhode Island Reds, Hamburgs, Games, White and Silver Laced Wyandottes, Leghorns, Langshans, Light Brahmas, Minorcas, Cochins, Buff and White Orpingtons, Bantams, also Hares, Rabbits, Guinea Pigs and Fancy Pigeons. D. L. Bruen, Platte Center, Neb. Write wants.

INCUBATORS

IT'S GOOD BIG HATCHES YOU WANT THIS year. Denver incubators are built and tested for this dry climate and positively do the work. Get our free catalog. Low prices, with freight prepaid. Coal heated colony brooders. Baby chicks and eggs for hatching from purebreds. Denver Incubator Co., 177 S. Broadway, Denver, Colo.

PET STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

COYOTTE AND RABBIT COURSING—REGIStered Russian Wolf pups $25.00 each. "Swiftcross" Russian and Greyhound pups, $10 each. "Fastcross" Russian and Stag pups, $10. Greyhounds and registered collies. Idlehour Kennel Co., Guymon, Okla.

YOU CAN MAKE A GOOD LIVING IN YOUR back yard raising rabbits for us. We will pay you from $1.00 to $2.00 each for youngsters. Breeders furnished at reasonable prices. Send dime for contracts and circulars. Thorson Rabbit Company, Aurora, Colo.

IF YOU DON'T FIND ADVERTISED HERE what you want, write our classified advertising department and they will be glad to place you in correspondence with the right parties.

LIVE STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

CATTLE

MILKING SHORTHORNS AND JERSEYS FOR sale. W. A. Wight, Las Animas, Colo.

FOR SALE—ONE REGISTERED 15-MONTHS-old Holstein bull and high-grade Holstein calves. Apply to Union College Farmer, Chas. A. Williams, College View, Neb.

100 HEAD OF HIGH GRADE HOLSTEIN COWS and heifers. A few yearling pure breds, and six bulls serviceable age and very well bred. Will not be at home until after the 5th of April. M. E. Penrose, 1855 Blake St., Denver. Main 5713.

WE CAN SELL 15 YEARLING BULLS AND about 30 bull calves, all registered, and of the best breeding and individuality. Among the yearlings are three herd headers, also one 4-year-old bull by Simoon. All at popular prices in order to sell. J. O. D. Ranch, Aroya, Colo.

REGISTERED JERSEYS AND MILKING SHORThorns. Jersey herd headed by Maggie's Shy Duke, 140084, Grand Champion Denver Stock Show. Two nearest dams average 54 lbs. milk per day. Shorthorns headed by Independence Lee 427351. Two grandams average 9023 lbs. milk in one year. The Hinman Silo Co., 1650 Champa st., Denver.

HOGS

REGISTERED, BIG TYPE DUROC JERSEY hogs for sale. Edgemoor Farm, Littleton, Colo. Caldwell Martin, Owner.

REGISTERED DUROC JERSEY BOARS AND gilts, sell at $15 and up according to age and quality. We are sold out on bred gilts, but can contract for gilts to be bred for later farrowing. Our sales at the Denver yards speak for the quality. J.O.D. Ranch, Aroya, Colo.

HORSES

REGISTERED PERCHERON AND STANDARD bred mares for sale. E. C. Mason, Boulder, Colo.

FOR SALE—IMPORTED ENGLISH SHIRE Stallion Wailstone James, weight 1,850. Geo. S. More, Route 2, Edgewater, Colo.

FOR SALE—IMPORTED ROAN 8-YEAR BELgian stallion, 2,100. One 3-year bay Belgian, 2 roan yearlings. As good as you will find anywhere. Purinton Bros, Wilcox, Neb.

NOBLE REX, 5-YEAR-OLD REGISTERED SADdle-bred stallion, 16 hands, black, 1,200 lbs. Grand individual, goes all five gaits; winner of stallion class at 1917 Denver Stock Show. By a son of the immortal Rex McDonald. Price, $750. Can be seen at Denver Cab and Omnibus Co. Stables, Denver, until April 1. After that at J.O.D. Ranch, Aroya, Colo.

JACKS AND MULES

KIT CARSON, A BIG-BONED 7-YEAR-OLD jack, winner at Denver show, $500. Also a great yearling jack, promises to be bigger and better than his sire, and out of a jennet who took first at Denver also; price, $250. We have some excellent mules for sale; all ages and sizes. J O D Ranch, Arova, Colo.

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WANTED—TO HEAR FROM OWNER OF GOOD farm for sale. Northwestern Business Agency, Minneapolis, Minn.

WANTED—HEAR FROM OWNER GOOD FARM for sale. Cash price; description. D. F. Bush, Minneapolis, Minn.

WANTED—TO HEAR FROM OWNER OF GOOD ranch for sale. State cash price and description. D. F. Bush, Minneapolis, Minn.

FARM WANTED—WANTED TO HEAR FROM owner of farm or fruit ranch for sale. O. O. Mattson, 2949 Cedar Ave., Minneapolis, Minn.

BUYERS, SEE THESE BARGAINS BEFORE YOU buy. Farms, businesses any kind, anywhere. Send for free magazine. Western Sales Agency, Minneapolis, Minn.

FOR RENT—800 ACRES, 20 MILES SOUTHeast Denver, fenced, 60 tilled, house, abundant stock water, on milk route. Fowler, 2555 W. 37th ave., Denver.

IMPROVED RAINBELT RANCHES, $10 TO $35 per acre; less for unimproved; any size tract. See us before buying. Jabnke & Konkel, 1410 Stout St., Denver.

400 ACRES NON-IRRIGATED LAND, SHALlow to water, dark loam soil, lays practically level with south slope; good fence, near school; good farms surround same. Price $15.00 acre Terms. 22 miles of Denver, 7 miles good town. A. J. Simonson, 214 Cooper Bldg., Denver.

UTAH LANDS—FREE HOMESTEADS, 320 acres; locate now; snow going fast; homeseekers' excursions first and third Tuesday; low rates; free circular. Homesteader's Guide, Salt Lake City, Utah.

WANTED—TO HEAR FROM PARTIES WHO have real estate to sell or exchange, as we have hundreds of customers that are in the market. Our plan is absolutely certain, as we positively guarantee you a customer or we make no charge or have no fee. Address Real Estate Dept., Weldon Valley Adv. Co., Weldona, Colo.

LAND—I HAVE PLACED OVER 400 FAMILIES in Weld county, mostly on homesteads and relinquishments. I know nothing desirable left open to entry, but can still furnish partly improved relinquishments or deeded lands at very low price. Call for list. Every statement guaranteed. Land shown by auto from Denver. Mackley, 1643 Champa, Denver, Colo.

OREGON AND CALIFORNIA RAILROAD CO. Grant Lands. Title to same reverted in United States by Act of Congress dated June 9, 1916. Two million three hundred thousand acres to be opened for settlement and sale. Power site, timber and agricultural lands, containing some of the best land left in the United States. Now is the opportune time. Large sectional map showing lands and description of soil, climate, rainfall, elevations, etc., postpaid for one dollar. Grant Lands Locating Co., Box 610, Portland, Ore.

I HAVE 160 ACRES OF AS GOOD LAND AND as good a water right as there is in the West. Sixty acres under ditch and in cultivation. Good house, well and other improvements. The entire 160 acres is all good level land. It is located adjacent to forest reserve and is an ideal place to farm and run a nice bunch of cattle. I am so situated that it is necessary for me to make a quick sale. I will sell for $6.00 an acre payment down; 10 years' time on the balance, or will consider part payment in trade with no money down. I want to turn this land and all you need to do is to show me you mean business. Write me if interested for further details and how you would prefer to make payments. Sidney E. Bartlett, 1402 Arapahoe St., Denver, Colo.

HELP WANTED

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WANTED — EXPERIENCED RANCH MAN, southern Wyoming; man with some capital. Fowler, 2555 W. 37th ave., Denver.

THOUSANDS GOVERNMENT JOBS OPEN TO men-women. $75.00 month. Steady work. Short hours. Common education sufficient. Write immediately for free list of positions now obtainable. Franklin Institute, B-177, Rochester, N. Y.

WANTED—IMMEDIATELY, 500 MEN, 20-40, for railway motormen and conductors; all parts United States; $60-$100 month. Experience unnecessary. Send stamp for application blank. National Railway, Dept. 188, Kansas City, Mo.

LUMBER

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

LUMBER—POSTS AT LOWEST PRICES. GET our delivered prices. Send lumber list for estimate. Pay after unloading. Kirk Company, Tacoma, Wash.

IF YOU DON'T FIND ADVERTISED HERE what you want, write our classified advertising department and they will be glad to place you in correspondence with the right parties.

SEEDS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

BROOM CORN—EARLY DWARF, $2.50 PER bushel. L. Sanders, Atlanta, Kan.

1916 RECLEANED ALFALFA SEED, $8.00 PER bushel. Chas. Kelly, Kinsley, Kan.

CHOICE ALFALFA SEED $7.50 PER BU.; BAGS furnished. Frank Lanier, Belle Plaine, Kan.

HIGH ALTITUDE SEED PINTO BEANS, $10.00 per cwt. L. M. Hunt Grain Co., Colorado Springs, Colo.

BLACK HULLED WHITE KAFIR SEED, RECleaned, tested and sacked, $2 per bu. Grover Lee, Pratt, Kan.

ALFALFA SEED FROM GROWER, $7.80 PER bushel. Sacks extra. G. J. C. Felzien, St. Francis, Kan.

WHITE SWEET CLOVER, NEW CROP, SCARIfied, high germination, $10.80 bushel. Wesley Foster Boulder, Colo.

I HAVE COLORADO YELLOW DENT SEED corn of good quality for sale. Price $4.00 per hundred. Ben Pugh, Bashor, Colo.

ALFALFA SEED FROM NORTHWEST KANSAS, 95 per cent pure, good germination, $5.50 per bushel. Geo. Bowman, Logan, Kan.

BLACK HULLED WHITE KAFFIR SEED—Recleaned, $2.25 per bu. 1916 crop. Well matured. H. W. Chestnut, Kincaid, Kan.

ALFALFA SEED AT VERY REASONABLE prices. I am selling lots of it in Colorado now. Free sample. "Alfalfa John" Franklin, Beaver City, Neb.

SEED PEAS—SAN LUIS VALLEY SEED PEAS. Prices and samples gladly submitted. Local and carload shippers. A. A. Salazar & Son, San Luis, Colo.

WHITE AUSTRALIAN SEED CORN, EXCELlent quality, grown on dry land near Denver. In lots of 100 pounds or more, 4c pound. D. W. Jackson, 1360 St. Paul, Denver.

ATTENTION FARMERS—BUY YOUR GRIMM alfalfa seed, Hologrimson and Lyman strains, direct from grower. Will furnish affidavits showing its history. Purity test, 99.39 per cent. Price 42c. Triangle Ranch, Cottonwood, S. D.

GENUINE MONTANA GRIMM ALFALFA FROM Government distributed seed, but 4.02 per cent foul seed, 55c per lb., postpaid. Per bushel, $27.00. Henry Guldborg, Brockway, Mont.

CHOICE SEEDS, DWARF AND STANDARD Kaffir Corn, Dwarf White and Yellow Milo Maize, White, Red and Black Cane Seed, Broomcorn seed, Sudan, Sweet Clover and other seeds. I. T. Reid, Goodwell, Okla.

IF YOU DON'T FIND ADVERTISED HERE what you want, write our classified advertising department and they will be glad to place you in correspondence with the right parties.

WHITE TEPARY BEANS—THEY WILL STAND more drouth than any other crop raised in the semi-arid region. My crop produced over 1,000 lbs. per acre without irrigation. Price ten cents per lb. here. H. H. Beckwith, Caddoa, Colo.

BROME GRASS SEED, $8.00 PER HUNDRED, recleaned, free from quack. Brown County Yellow Dent seed corn, germination 95 per cent. The very earliest Dent corn in the Northwest, $4.00 per bushel. Wm. W. Moore, Shields, N. D.

NURSERY STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

TREES—20 MAMMOTH IMPROVED ELBERTA at $1.00. Order at once. Money back if not satisfied. Everbearing strawberries, $2.00 per 100. Sunflower Nursery, Lawrence, Kan.

IF YOU DON'T FIND ADVERTISED HERE what you want, write our classified advertising department and they will be glad to place you in correspondence with the right parties.

MISCELLANEOUS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

DELICIOUS ALFALFA HONEY FROM PRODucer. Two 60-lb. cans, $12.75. Satisfaction guaranteed. Wesley Foster, Boulder, Colo.

WOMEN, ATTENTION—SAVE MONEY. DElicious breakfast food. Easily made. Mrs. Sharp's recipe. Inclose a dime. Sharp, Iola, Kan.

FOR SALE—COMPLETE J. I. CASE THRESHing outfit. 25-75 H. P. steam engine. 36-58 separator, water tank, 14 in., 8 bottom plow. Used three seasons. If interested, write Guisinger Bros., Burdett, Colo.

BUSINESS CHANCES

FREE FOR SIX MONTHS—MY SPECIAL OFfer to introduce my magazine, "Investing for Profit." It is worth $10 a copy to anyone who has not acquired sufficient money to provide necessities and comforts for self and loved ones. It shows how to become richer quickly and honestly. Investing for Profit is the only progressive financial journal and has the largest circulation in America. It shows how $100 grows to $2,200; write now and I'll send it six months free. H. L. Barber, 449-20 Jackson Blvd., Chicago.

PATENT ATTORNEYS

IDEAS WANTED — MANUFACTURERS ARE writing for patents secured thru me. Four books with lists hundreds inventions wanted sent free. I help you market your invention. Advice free. R. B. Owen, 162 Owen Bldg., Washington, D. C.

BEE SUPPLIES AND HONEY

BEE SUPPLIES OF BEST QUALITY. SEND for 68-page illustrated catalog. We also sell comb and extracted honey. The Colorado Honey Producers' Association, Denver, Colo.

KODAKS

KODAKS, CAMERAS, PHOTO SUPPLIES—Ford's, the best kodak store, 1029 16th St., Opp. Old P. O., Denver, Colo., for Eastman Kodaks, all makes cameras, films, photo supplies; develop any size roll films, 10c; print pictures, 3c each and up; mail orders solicited; kodak and camera catalogs mailed free upon request. Mention this paper.

Read the advertisements. They contain valuable information. When you write to advertisers be sure to mention **Western Farm Life.**

The Grange

Offices 415 Charles Block, Denver

C. W. SWAYZE, Editor

Officers

JOHN MORRIS, Golden, Colo., Master.
R. J. ALTIG, Boulder, Colo., Overseer.
C. W. SWAYZE, Stockyards Sta., Colo., Lecturer.
K. S. RHEA, Golden, Colo., Treasurer.
RUDOLPH JOHNSON, State House, Denver, Secretary.
OTIS SCRUGGS, 415 Charles Block, Denver, Business Agent.

The opening of Grange offices, 415 Charles Block, 15th and Curtis streets, is a marked progressive feature in the organization. These offices are centrally located and will be open to all members of the Grange from 9 a. m. to 4:30 p. m. State Purchasing Agent Otis Scruggs is in the office during those hours and ready to serve the interests of the members. Mr. Scruggs has his price list on practically all articles of merchandise about complete and has already made a material saving to Grange members. He visited Progressive Pomona at Bennett on March the 10th and advised that the Central Valley Grange at Bennett did a business thru its purchasing agent of $4,000 the month of February and made a saving of $400 thru co-operative dealing.

An important feature of Mr. Scruggs' work is the disposing of articles of any nature for members of the Grange to other members. Those who have something to sell will list it with the purchasing agent, and those who are in the market for anything likewise make their wants known. In this way the buyer and seller are brought together thru the purchasing agent at a saving to both, and the middleman's profit is eliminated. All members are urged to make use of the services of the State Purchasing Agent.

Darden Pomona

The regular quarterly meeting of Darden Pomona was held in the spacious new hall of Crescent Grange, Broomfield, Saturday, March 10th. This hall, built at a cost of $2,800, will be, when finished, perhaps the most practical and artistic Grange building in the state.

Crescent Grange is wide awake. Its membership now numbers about 275 and they expect to reach the 300 mark soon. After the most sumptuous dinner that has been served Darden Pomona for a long time, the afternoon's program was opened by Dr. H. T. French, head of the Extension department of Colorado Agricultural College, with a very interesting paper on "Things Worth While in Agriculture." Dr. French has been a member of the Grange for more than thirty-one years; he helped organize the Granges in Idaho and Oregon and regards it as the great farmers' organization thru which can be accomplished anything in the way of the building up of a community and exerting an influence for remedial legislation. The Grange is a farm home where real co-operation is successfully carried on among men, women and children.

Dr. French made a strong plea for the consideration of the young people on the farm, where the best brawn and brain are needed. "Make life for them cheerful—substitute a spirit of optimism for the frown or look of disapproval—look up, not down—look out, not in—live in the present with your face towards the future."

Mrs. H. T. French, past lecturer of Idaho State Grange and editor of "The Farm Home" department of Western Farm Life," gave an instructive talk on "Club Work," "The Home," and "Co-operation Between Parents and Teachers." Mrs. French urged the organization of women's clubs in all rural districts.

R. Gingrich, of the Gingrich Produce Co., Denver, made an instructive talk on "Successful Dairying," which can be conducted with profit on the cheaper lands in the West, where the best feeds can be successfully grown at a light expense. "We may have grain or root crop failures year after year, but the faithful old dairy cows provide a steady income fifty-two weeks in the year." "Get rid of the scrub bull and if necessary co-operate with your neighbors in buying a registered bull of a good dairy breed and descended from dams that have high producing records." "Sell or beef the unprofitable cows—give the good ones the right care, a balanced ration, and your profits will increase proportionately."

In the evening the Grange was addressed by Dr. John B. Phillips of the State Tax Commission. Dr. Phillips is a convincing, lucid speaker and made plain to the audience the good work his commission is doing. "The big financial interests are antagonizing the work of the commission and are leaving nothing undone to bring about the appointment of members to the commission that would be favorable to them," he said. A committee was appointed to interview the commissioners of Jefferson county for the purpose of securing a county agriculturist.

Mr. Otis Scruggs, Purchasing Agent for the State Grange, made a short talk on the work being accomplished and the money he is saving members of the Grange.

After the open meeting, a large class was initiated in the fifth degree by Genesee Grange.

Grange News

Arlington Grange No. 250 had good attendance during the past two months. Literary program was the principal feature of one meeting. On March 10 the Dandarroya Grange met with them and the Farmers' Institute of the local granges was conducted. Some of the topics discussed were, "High Cost of Living," and "Poultry Raising."

Tri-County Grange No. 264 has had an average attendance of 70. A report of the State Grange session was given by the worthy master and his wife. A Federal Farm Loan association has been organized, most of the members being from the grange. The business agent has been busy, principally with orders for hay, oil, gasoline and field seeds.

Silver State Grange No. 171 held two joint sessions with the Farmers' Union and had about 100 present each time. By co-operating, they got a raise of 8c per hundred-weight on the price of milk for February and March.

Crescent Grange No. 136 has had an average of 60 in attendance. At their meetings they have had discussion on grange, school, church and roads. The grange is in very good condition.

Kiowa Grange No. 223. Most of the entertainments have been furnished by the local grange, but an exchange program has been arranged for.

Sunflower Grange No. 162 has had a number of interesting plays; they also have a paper written once a month which is read in the grange. They are giving entertainments and dances to pay off the debt on the grange hall. The degree team, which has been giving the work this year, has been very regular in attendance. A number of carloads of coal have been used by the members of the grange.

Bunny Dale No. 273 is having discussions on the bills before the legislature. This spring they are planning on a new grange hall.

Box Elder Grange No. 232. Discussions on "Best Things in Life" and "Practical Agriculture," recitations and readings have composed the literary program. This grange is also planning for a new hall. Coal, flour, sugar, coal oil and seeds have been bought thru their purchasing agent.

Bluebell Grange No. 265 held two debates with other granges and have had talks by good speakers. An exchange bureau has been started with three or four other granges.

Genesee Grange No. 219. The attendance has been unusually large with increased interest. A basket social was given, from which the grange cleared about $60. Contests have been creating interest.

King Center No. 269 has had a dozen or so candidates. Has had talks by local talent on alfalfa, preparation of soil, dairying, and education. Charts and material for lectures are furnished by the International Harvester Company. They have proven very interesting and are recommended for other granges to use.

South Boulder Grange No. 225 has been having a paper in connection with the program. It is full of jokes and items of interest. A contest has been started which will end June 1st.

Columbine Grange No. 153 has just closed a contest for membership which has been very interesting and created enthusiasm. The Maple Grove drill team conferred the third and fourth degrees at the close of the contest on 75 new members and all enjoyed the supper which followed.

Henderson Grange No. 96 has also had a campaign for membership and the Maple Grove drill team conferred the third and fourth degrees on 25 candidates after which a supper was served which was enjoyed by all.

Maple Grove No. 154 was entertained last meeting by Dr. Vosburgh and a large crowd was in attendance. Next meeting the Columbine Grange will entertain them with a program.

State Master Jno. Morris, recently visited the subordinate granges in La Plata county. He found twelve wide-awake granges in that county and assisted them in making arrangements to employ a county purchasing agent so that the producers will be able to get the real values for their commodities.

State Secretary Rudolph Johnson has met with a number of granges in Yuma county recently and reports them in a growing condition.

Profitable Farm Poultry

W. E. VAPLON

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries Poultry Department, Western Farm Life, Denver, Colorado.

USUALLY there is a great lack of "roofs" on a farm, not enough of the farm under a good roof. This is especially true regarding the poultry accommodations. There should be enough shelter for all the poultry, so that at any time, if because of weather conditions fowls and chicks must be kept indoors, they will be comfortable and happy. Especially for early chicks must plenty of house room be provided; cold winds and cold wet ground help greatly to swell the mortality list. The average brood coop, for hen and chicks, is too small to furnish more than shelter at night and while it answers well enough in summer, does not furnish the room the chicks need to keep them contented when they should be kept in. Many poultrymen do not let the hen run with the chicks for the first three or four weeks, keeping the hen shut in while the chicks can go and come at will. A hen does not use real horse sense at all times; she is quite likely when hungry to keep going, regardless of the comfort of her family; perhaps she is an advocate of the doctrine of the "survival of the fittest," and believes that her chicks are not worthy of life if they are not able to survive the hardships that she can. Try the plan during the early part of the season of keeping in the mother and see if you do not save more chicks.

A Convenient Brooder House

We have found this brooder house a most convenient and useful building. It is 6x8 feet, has two small window sash in front and one in the rear. We use this house for the chicks from the time they are hatched until laying age, and during the winter months use it for many purposes, conditioning fowls for market, extra males, a special breeding pen, etc. On the farm the house can be moved out on the range as soon as the brooder is removed. To make this easy, the sills are made of 2x8 planks in the form of runners. The house above shows the lamp outside and the hover inside. The window in the rear furnishes plenty of light immediately surrounding the hover; chicks are inclined to go toward the light and are often chilled when they get too far from the source of warmth and should be kept close to the heat until they are familiar with their home, and the distance should be increased only gradually. Remember, that good shelter will keep down losses from cold weather and disease. This broder house is both comfortable and inexpensive.

Best Breed for Eggs?

Will you please advise which is the best chicken for egg production in Colorado? I have some White Leghorns which don't give results as they should. Any suggestion you may offer will be appreciated.—W. M., Sopris, Colo.

I am sorry that we cannot answer your question as clearly as you askd it, as to the best chickens for egg production for Colorado. Personally we believe that there is no best breed, but that the time of hatching and the care given the flock have more to do with egg production than breed. The white Leghorns are proving good in every section of the state, and if you are not getting results with them, either the particular stock you have is to blame, or they are not getting the care they should. Your stock may have been bred principally for exhibition purposes, without regard to utility qualities. If you will select your best layers from year to year, hatch your pullets not later than April or early May, give them good care, keep them free of lice, furnish a variety of feed, do not expose them to cold and wet in winter, there is no reason why they will not fulfill expectations in the way of eggs.

Determination of Sex

We have the Toulouse Geese and have the utmost difficulty in trying to tell the geese from the ganders. Have always thot that the goose had a division between the legs while the gander had only one egg basket, I believe they call them. I have sold supposedly ganders and have them turn out to be geese. Would appreciate some more definite way of telling if you have one.—E. R. G., Idaho.

It is not difficult for a breeder of geese to distinguish the sexes, especially when the geese are grown. The gander is usually larger and coarser than the goose; the goose has a hoarser cry than the gander, whose cry is somewhat shrill, and the head of the gander is larger and coarser than that of the goose. The U. S. Department of Agriculture has just issued a bulletin entitled "Goose Raising". I would suggest that you write for Farmers' Bulletin No. 767, addressing your request to the Department of Agriculture, Washington, D. C.

About the Hogan System

Would you kindly give me some information regarding the Hogan System? Is it similar to the Philo system? By giving this information you would greatly oblige one of your subscribers.—F. E. H., Colorado.

The Hogan and Philo systems are altogether different in as much as the Philo system was a system of housing fowls—six hens to a pen about 3 x 6 in dimensions. A great many started in this system a few years ago, but all found it rather burdensome to take care of so many small units, and little is heard today of the Philo system. The Hogan system is much like the Potter system and is a method of determining the prolificacy of a hen. The Potter book can be bought for $1.00 and the Hogan for $2.00. It is impossible to fully describe the method advocated in this book, but we believe that anyone is justified in buying the book, as without question the rules given for selecting and culling out are worth more than the price. Address T. F. Potter, Downer's Grove, Illinois, for the Potter book, and the Northwest Poultry Journal, Salem, Oregon for the Hogan System book.

RAT & LICE PROOF COOP

Here's the coop you poultry keepers have prayed for. Saves your chicks from vermin and weather. The perfection

APSA Galvanized STEEL BROOD COOP

at BARGAIN PRICES now cheaper than wooden ones. AM. POULTRY SERVICE ASS'N, Box 153 Kansas City, Mo.

Write for Illustrated Folder Special Prices FREE

GALLOWAY'S LATEST SPREADER

Two horses handle it anywhere! Covered by eleven patents. Thirty days' actual field trial. Returnable within twelve months if not perfectly satisfactory—we pay freight both ways and refund your money without argument. Manufactured in our factories. Sold direct from factory to farm.

ONLY 42 IN. HIGH AT CENTER

GROW BIGGER CROPS

Make use now of every available load of manure! Properly spread it means money added to your bank account next fall. Ask for 1917 free book today.

Wm. Galloway Co., Box 1829, Waterloo, Iowa

Tells why chicks die

E. J. Reefer, the poultry expert, 424 Reefer Bldg., Kansas City, Mo., is giving away free a valuable book entitled, "White Diarrhoea and How to Cure it." This book contains scientific facts on white diarrhoea and tells how to prepare a simple home solution that cures this terrible disease over night and actually raises 98 per cent of every hatch. All poultry raisers should certainly write Mr. Reefer for one of these valuable FREE books.

GOPHER DEATH TRADE MARK

Kills Prairie Dogs and Gophers of all kinds. Endorsed by State Experimental Stations. 400 tablets prepaid for $1.25 Warranted. Rancide Tablets, 25c Ask druggist or send direct. Booklet Free F. D. Chemical Co., Ft. Dodge, Ia.

"ROUGH ON RATS" ends RATS, MICE, Bugs. Don't Die in the House. Unbeatable Exterminator. Ends Prairie Dogs, Gophers, Ground Hogs, Chipmunks, Weasels, Squirrels, Crows, Hawks, etc. The Recognized Standard Exterminator at Drug & Country Stores. Economy Sizes 25c, 50c. Small 15c. Used the World Over. Used by U. S. Gov't. Rough on Rats Never Fails. Refuse ALL Substitutes.

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POTATOES

9 4-5 Bushels from One Pound of Seed

Three potatoes, planted in 56 hills in Huron County, Ohio, yielded this amount. The seed, the planting and the crop harvested are matters of county record. You can do as well, or even better, by following my instructions. It is not a matter of variety of seed, or soil, or fertilizer used, important as each of these matters is, but it is the selection and cutting of seed and treatment. It was these elements that enabled me to produce the yield of 552 lbs. of potatoes from one pound of seed. Full information as to how it was done, the seed used, the soil, the fertilizer employed, the tillage and the methods of producing this large crop will be sent for One Dollar. Send your order now and grow more potatoes from less seed. Any one that feels too poor to spend a dollar to learn how to increase the yield in raising potatoes, send me your name and address. Planting time is near. Send your order today and raise more potatoes from less seed.

A. R. GIBSON, Brookfield, Ill.

Expert Explains Varietal Differences in Alfalfa

Continued from Page 3

seed bed, unless you expect to flood the ground with irrigation.

4. Sow alfalfa seed shallow, not over an inch deep, as a rule, broad-casting seed and then harrowing is usually successful. Shallow drilling is better.

5. Sow Northern grown seed if possible. Eight to ten pounds of seed per acre is sufficient if conditions are right.

6. Companion cropping or nurse crop is advisable if plenty of moisture is available. The grain crop should be sown rather light, forty to fifty lbs. per acre.

Spring seeding in fall-sown grain is successful if the alfalfa is sown very early, so that the alfalfa gets well started before it is choked back by the grain.

8. Seeding alfalfa on land inclined to blow can be accomplished by seeding in stubble of the year before, without plowing. The standing stubble checks the blowing and does not tax the alfalfa for moisture.

9. In irrigating alfalfa, light frequent irrigations are better than long soaking.

10. New seeding of alfalfa should be clipped if weeds are choking out the alfalfa, but cut high so as not to cut the alfalfa before stooling starts.

Canada Offers 160 Acres Land Free to Farm Hands

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The Demand for Farm Labor in Canada is Great. As an inducement to secure the necessary help at once, Canada will give **one hundred and sixty acres of land free as a homestead** and allow the time of the farm laborer, who has filed on the land to apply as residence duties, the same as if he actually had lived on it. Another special concession is the reduction of one year in the time to complete duties. Two years instead of three as heretofore, but only to men working on the farms for at least six months in 1917. This appeal for farm help is in no way connected with enlistment for military service, but solely to increase agricultural output. A wonderful opportunity to secure a farm and draw good wages at the same time. Canadian Government will pay all fare over one cent per mile from Spokane to Canadian destinations. Information as to low railway rates may be had on application to

J. L. PORTE
Canadian Government Agent
Dunn Block, Great Falls, Mont.

Live Items About Livestock

The livestock industry looks more attractive than it has for many years. The forepart of March, hogs sold in Chicago at $15.10, a price that had not been reached since the Civil war. If we could tell our forefathers that a farmer could take a little bunch of ten 200-pound hogs to the market and receive a check for more than $300, they would roll over in their graves and declare all men liars. At the same time hogs sold on the Denver market at $14.85. Steers recently sold on the local market at $11.50, the highest price ever reached on the Denver market. Cows have sold at $9 and sheep up to $14 during the past few weeks.

It is generally conceded that we will see no cheap meat for years to come and no risk will be assumed in extending livestock production on the farm. Scarcity of meat animals is the keynote of the situation in every branch. Killers have been getting few decent steers below $10.50, those selling below that mark being mere feeders.

Lower Cost of Production

The big objection made to increasing the number of livestock on the farm is the cost of production; with corn at $1.10 and other feeds at proportionate prices the farmer will think a long time before taking chances on giving such high-priced feeds to stock. This objection can be met thru lowering the production cost of both livestock and feed. While there perhaps is no better grain than corn for finishing livestock, yet many of the prize steers and barrows at the big shows never tasted corn. The small grains and pasture, especially alfalfa, make a growing and fattening ration that will answer the purpose. Alfalfa not only makes a good pasture for hogs, but it also furnishes a growing protein feed for them during the winter when other feed is scarce.

The farmer under irrigation can grow alfalfa easily, but on dry land it should be planted in rows and cultivated the same as corn. Where it is difficult to get alfalfa started other grass crops can be substituted; sweet clover, Sudan grass and grain sorghums are being used extensively for hog pastures and are proving quite satisfactory.

Livestock farming is the ideal and as a rule the most profitable way to market the crop and the only way to renew the fertility of the soil. By carefully planning the "livestock rotation" one can profitably utilize all the grain and forage grown on the place. The livestock business of the future will be based on "quality." It costs as much to feed and care for the scrub as it does the high grade or pure bred, but the latter will pay a handsome profit on labor and feed, while the former will lose money. Thru lowering the cost of production by the extensive use of pasture, more money will be realized in livestock farming.

The Moisture Supply

Reports from crop correspondents thruout Colorado, New Mexico and Wyoming indicate that the winter has been fairly favorable in most localities and that spring moisture conditions are good. Snowfall in the mountains was normal or above, so that the irrigation farmer finds comfort in the thot that he will have plenty of water for his crops during the growing season. While it is too early to make any crop forecast, even for winter wheat, farmers in the Rocky Mountain region find winter conditions a pretty safe guide. If crops get a fair start summer rains can generally be depended on to pull them thru. Or irrigation water where the farmer does not depend on the rainfall. Fortunate the man who has handled his land to conserve the winter moisture.

San Luis Valley Hogs

A statement from the San Luis Valley Hog Growers' association shows that the San Luis valley section produced for sale nearly $3,336,000 worth of hogs during 1916, a total of 1,112 cars of fat hogs having been shipped from the section during the year. The chief shipping point, Monte Vista, marketed a total of 360 cars of hogs, most of them coming to the Denver market.

According to the statement, which was prepared by Charles Edman, secretary of the association, this is an increase of nearly 50 per cent over the number shipped in 1915, the shipment for 1915 being only 585 cars. Estimates submitted by farmers and hog growers of the section show that the number shipped last year will be surpassed by the number shipped this year, the estimate for this year being 5,000 carloads. Mr. Edman estimates the number of hogs to the car as seventy-five, which in case hogs remain at the high prices quoted at the present time, would run in excess of $5,000,000.

INCREASED POTATO ACREAGE

The acreage planted to early potatoes in six southern states is estimated to be 188,000, as compared with 161,000 in 1916—an increase of about 17 per cent. This estimate is based upon reports to the Truck Crop Specialist of the Bureau of Crop Estimates from Virginia, North Carolina, South Carolina, Florida, Alabama and Texas, the principal early potato sections of the South. In spite of the high cost of seed, plantings are increased in practically all sections except in eastern Texas.—Leon M. Estabrook, Chief of Bureau.

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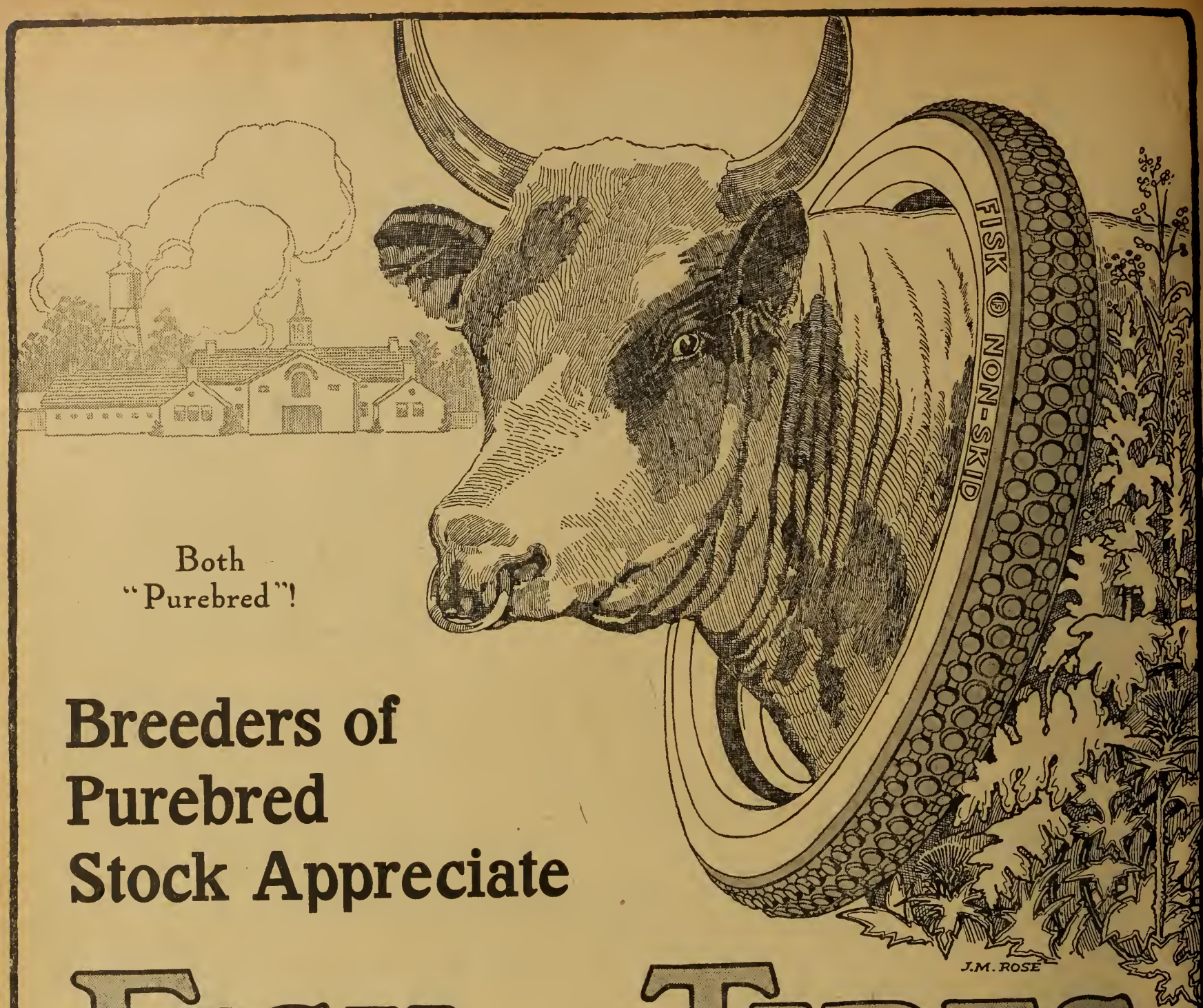

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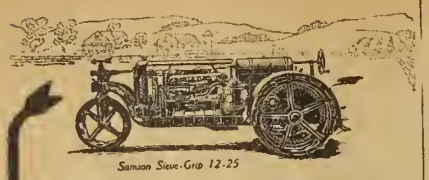
WESTERN Farm Life

A DENVER BOY IN HIS CORN PATCH

If the grown people who cultivate vacant lot and backyard gardens in the towns and cities of the inter-mountain country will follow directions given by government workers to the Boys' and Girls' Garden Clubs they will grow crops like that shown in this picture. This is one of the Denver school gardens of the 1916 season.

Denver, Colorado
April 15, 1917



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High Altitude Crops

Would you please advise me in regard to the crops one can raise near Howbert, Colo. (elevation about 8,200 ft.)? What vegetables will grow and in what month will I have to put out my garden? What flowers and vines grow best? Can we grow any fruit trees, if so, please name them? Also tell me what small fruits, if any, will grow there. Some say chickens do no good in elevation of 8,200 ft. Is it true?—S. W. P., Boyero, Colo.

At 8,200 feet the best small grains you can grow are oats and bald hullless barley. Cut these with a mower in the dough state and cure for hay. If planted on a slope or other dry location barley will mature and form grain most seasons, but will be green if grown in bottom land. The hens enjoy threshing barley if the grain is filled and firm.

You can raise San Luis Valley stock peas with either of the above on slopes or uplands, but don't plant peas in bottoms. Rye, wheat and emmer do fine but the beards detract so from their feeding value that oats are everywhere preferred. Timothy flourishes clear to timberline if planted in bottom land, but don't plant timothy on slopes and don't plant alfalfa in cold bottoms. Alfalfa takes without inoculation thruout the mountains, but may yield better if inoculated. Sweet clover will do well. Last year at 8,500 feet I had sweet clover eight feet high or more, higher than I could reach on tip-toe. The yellow blossom variety is less coarse than the white.

You can raise five or six times the tonnage of roots to the acre that you can get of any other feed, and they are almost as valuable a feed as silage, and cheap to raise. Turnips and rutabagas, carrots and stock beets are the most important. A neighbor of mine has raised turnips and rutabagas weighing over eight pounds each. If you can haul to Cripple Creek your best cash crops will be potatoes and rutabagas. If you have a closer market, grow garden peas. They grow to perfection and bring eight or ten cents a pound in the pod.

In the garden you can grow all the hardy root crops as beets, carrots, onions, parsnips, radishes and salsify. Above the ground you can raise cauliflower, lettuce, peas and spinach. Have a good long row of rhubarb, and another of horseradish if you like it. "Los Angeles market" head lettuce will grow fourteen inches across. We like Simpson best of the curly lettuce. The Icicle and Japanese Summer radishes are the finest. Select hardy and early varieties. By growing the hardy kinds that do well there you can have as fine a garden as you could in California, and variety enough for anyone.

Plant your garden May 20th, but get in rutabagas, parsnips, onions and lettuce any time in April that you can work the ground. Plow slopes and uplands early and plant early. If the frost nips oats and barley they will stool the heavier. Don't plant spuds earlier than May 15th and dig them about Sept 15th.

Get acclimated vines from your neighbors. Standard sweet peas, poppies, nasturtiums, pansies and irises are successful. Collect a bed of wild flowers, especially the Columbine and Tiger Lily.

Make your hen house tight on three sides with lumber and roofing. On the south or east front have glass sashes. Cover one sash with muslin. If on cold mornings your rooster's comb is greyish white, there is too much moisture inside. Ventilate a little more freely. Give them room and light and turnips to pick. They will do as well there as anywhere. Start your flock with baby chix. Don't try to acclimate old hens.—Gordon Kent, Pinecliffe, Colo.

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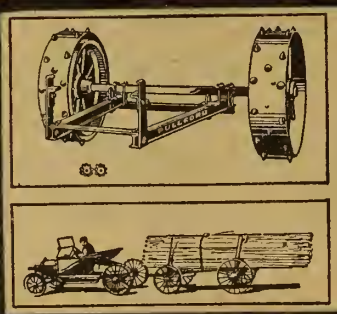

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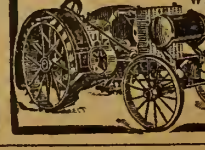

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Volume XIX DENVER, COLORADO, APRIL 15, 1917 Number 8

Emergency Call for Normal Acreage of Potatoes

PRESIDENT SWEET OF NATIONAL ASSOCIATION GIVES TIMELY ADVICE

WAR conditions make it essential that our growers do their utmost to provide the nation with wholesome food at a reasonable cost. Therefore a normal acreage of potatoes should be grown in 1917 and care should be taken in the handling of the crop in order that a full normal yield may be produced, thus reducing the high cost of living, as potatoes are one of the best articles of food, and usually one of the cheapest.

Potato growing should be attempted only by those who have ground suited to the production of potatoes, and who are willing to give the crop the care and attention in handling that is absolutely essential to insure a good yield.

Sandy or clay loams containing plenty of humus to absorb and hold the moisture are the best potato soils. Potatoes require a rather loose soil that will permit the free circulation of air, hold a goodly amount of moisture without saturation, and allow the tubers to expand freely. It should also have good drainage in order to quickly carry off any surplus water and avoid waterlogging of the soil.

On soils where potatoes have not heretofore been grown it would hardly be advisable to experiment with potatoes this year, unless the soil seems to be particularly favorable, or successful crops have been raised on adjoining land of the same type, because of the high price of seed stock, which will make it much more costly than normally to grow a potato crop this year. With good seed stock at from $5 to $6 per cwt., and using at least 800 pounds to the acre, it will cost the average grower in the West, without the use of commercial fertilizers, at least $75 per acre to grow potatoes this year. Therefore unusually good yields or abnormal prices will have to be obtained in order to make the crop profitable to the grower.

Stick to the Rotation

The farmer who has good potato soil and is growing a potato crop regularly in his rotation should keep to the acreage provided for by the rotation he has adopted. If he has a good potato soil but has not been including potatoes in his rotation, he might this year devote the acreage usually planted to a hoed crop, to potatoes instead, if he so desires, but he should see that the soil is put in proper condition for the production of potatoes by plowing under a green crop, or plenty of well-rotted manure. In any event the crop acreage should not be more than he can handle with the utmost care.

As to varieties in Colorado, the late potatoes that give the best general satisfaction are the Rural New York, Pearl, Russet Burbank and Peachblow or Red McClure; the early varieties, Early Ohio, Rose Seedling and Irish Cobbler.

Reports from all over the country show that seed potatoes are scarce and high everywhere, ranging in price from $4.20 to $6.66 per cwt. In Denver good seed stock is bringing from $5.25 to $6 per cwt. The seed houses of Denver are carrying more or less limited stocks and some of the growers still have a little, but the supply generally is quite limited.

Disease-Free Seed

Because of the high cost those who are purchasing seed stock should be careful to see that the seed they buy is free from fusarium and very little affected with the scab or rhizoctonia. The fusarium can be detected by cutting off a small piece of the stem end—the end opposite where the numerous small eyes are—and noting if there is a dark spot or ring inside the potato. If there is, do not use that potato for seed, and if any considerable proportion of the potatoes show such spots reject the entire lot as unfit for seed. A reasonable amount of scab or rhizoctonia can be overcome by proper treatment with corrosive sublimate before planting.

Don't use anything but good seed and take the utmost care in handling the crop. You cannot afford to do otherwise this year.

Whole seed, selected from good stock and coming from good hills, is unquestionably the best for seed purposes, but as this requires about 50 per cent more seed than when it is cut, this year, because of the high price of seed stock, the use of cut seed is likely to be general.

All seed potatoes should be treated with corrosive sublimate before cutting and using for seed purposes. The treatment is as follows: Dissolve four ounces of the corrosive in a small quantity of warm water, and then add to thirty gallons of water in a large wooden barrel or wooden tank. Soak the first sack of potatoes in the solution for one and one-half hours, the second sack for one and three-quarters hours, and the third sack for two hours; then pour out the solution where it can do no harm, as it is a deadly poison, and make up a fresh solution and treat as before, repeating this until all of the seed potatoes have been in the solution the proper time. Set the sacks in a clean place and allow the potatoes to dry off before cutting and using for seed.

LOU D. SWEET
President National Potato Growers' Association

A Rocky Mountain Sweet Potato

Plant Four Inches Deep

Under ordinary conditions potatoes should be planted about four inches deep. The rate of planting will depend largely upon the condition of the soil. If the land to be used has been in alfalfa for a number of years, and is well filled with humus, the rows may be made three feet apart and the hills one foot apart in the row, which will give about 14,000 hills per acre. If the land is not in the very best of condition, it would be safer to plant one and one-half feet apart in the rows, which will give about 9,800 hills per acre. Using cut seed pieces averaging two ounces in size, with two good eyes in each piece, if possible, it will require about 1,800 pounds of seed to plant an acre with the hills one foot apart, and about 1,200 pounds with the hills one and one-half feet apart.

Where the soil is not very good or the water supply is limited or doubtful, the planting should not be closer than two feet apart in the rows, which would require about 900 pounds of seed. Smaller seed pieces may be used, but the loss in stand is likely to much more than offset the saving in seed and the plants are usually weaker.

Under dry farming conditions where hilling is not practiced, to conserve the moisture supply, potatoes should be planted somewhat deeper to allow for the mulching of the top soil, and plenty of room should be allowed in the planting, so as to provide sufficient moisture and plant food for each hill.

Growers Short of Seed

The conditions this year in the potato industry have been and are still very abnormal all over the country. Because of the very short crop, prices have been extremely high for market stock, and now the supply of seed stock is found to be limited, because many of the farmers have sold themselves short. This shortage, together with the fact that many of the growers in the large eastern and northern districts had practically crop failures last year, and the present high cost of commercial fertilizers, which must be used in many potato-growing sections, is likely to result in a considerable decrease in acreage planted this year, as well as in smaller yields. A reliable report from Maine estimates that it will cost the growers from $150 to $175 to produce an acre of potatoes this year, and that the normal production cost of 85 cents per barrel of 165 pounds will be increased to about $2 per barrel.

Under such conditions the grower cannot afford to be careless with his crop, and it behooves him to use only the best of seed, treating it carefully with corrosive sublimate before planting, and handling the crop with the utmost care in order to obtain maximum yields of good potatoes, for which he is practically certain to get very satisfactory prices next fall. In view of the threatening war conditions, and the consequent necessity for abnormal supplies of food, our growers should feel it their patriotic duty to get the highest possible yields out of their farms this year.

Strawberries On the Dry Farm

E. R. Parsons.

Some years ago I was invited by the Chamber of Commerce at Colorado Springs to tell them all about dry farming. I was telling them about many different crops, all of which are considered good to raise in the dry districts now, but were looked upon dubiously then.

They asked me where I drew the line. "I draw the line at watercress," I answered. Of course they laughed, but I still draw the same line, for the art of dry farming is to supply the moisture demanded by the crop and with a 14 to 15-inch precipitation we can do this for anything but water plants or water-bottom trees.

The art of raising strawberries without irrigation consists in giving them as much room as possible, both vertically and horizontally.

They should be planted out in damp weather if possible, and the roots should be spread out and down, especially down, as far as possible. The method is this: A hole is dug with the trowel according to the length of the roots; then a little pointed mound of dirt is raised in the middle, on which the plant rests with the roots trailing down the sides; the hole is then filled up and tamped. They need plenty of hoeing or cultivating and when thru fruiting, in order to diminish the loss of moisture by transpiration of the leaves, a mower may be run over the bed and a mulch added of straw.

Early in the spring some corral dirt may be worked in on the surface between the plants when the mulch is removed. During the summer months when runners are sent out, not more than one to the plant should be allowed, and the following spring these should all be removed when rooted to another bed. If all the runners are allowed to remain and grow the bed soon becomes matted, and there not being enough moisture to go around, the plants stop fruiting and die out.

Turning the Potato Loss Into a Good Yearly Profit

UTILIZATION OF OFF GRADE IN MANUFACTURES AND FEEDING

H. E. HORTON

Agricultural Commissioner, American Steel and Wire Co.

STANDARDIZATION is the nub of marketing. Grading is unsatisfactory or impossible without the means of using the offgrade stock at a profit.

There are specially favored regions in the United States where the potato grows to perfection. At present, in all these localities, the production per acre of potatoes could be increased, and the quality, from the industrial standpoint, greatly improved; the first, yield per acre, by the intelligent use of fertilizer; the second, low quality, by plant selection. There is no good reason why these potato districts should be held back in their legitimate development.

The great obstacle to potato growing is ignorance; ignorance of production and possible industrial uses. Another serious obstacle to potato growing is the defective marketing systems. The root of the marketing question is grading or standardizing, and the establishing and maintaining of a standard is only possible when there is a profitable use for stock which does not come up to the standard.

Another obstacle to potato growing is the occasional abnormally big crop that is handled in a manner to demoralize prices and discourage the grower. A means for converting the excess production of a year into nonperishable form will take care of the big year.

In the United States economic thot has not grown to the point when an analysis of the uses to which a crop is put receives deserved attention. Obviously the uses for potatoes are the table, industrial, and livestock feeding. There is no logical reason why more potatoes should not be used on the table, why high-grade potato starch should not be made at home and not imported, why feeding livestock with potatoes should not be a general practice.

To learn the opportunities connected with a big potato production it is only necessary to turn to Germany and study the production and uses of the potato crop.

Area Devoted to Potatoes

A careful census shows in one year in Germany the production of 1,579,533,333 bushels produced on 8,151,000 acres. (The potato acreage in the United States in 1912 was 3,711,000, and the production 420,647,000 bushels, a little more than a quarter of the German production.)

In Germany potatoes occupy two-thirds of the total area given to tilled crops, and this means 12.3 per cent of the total area of field crops.

Uses Made of Potatoes

Economic studies in Germany are well advanced and a study has been made of the uses of potatoes. The following figures should be of great interest to everyone in this country interested in the production of this crop:

440,800,000 bushels of potatoes used on the table;

91,833,333 bushels of potatoes made into alcohol;

51,426,666 bushels of potatoes made into starch;

191,013,333 bushels of potatoes used for seed;

646,506,666 bushels of potatoes used for feeding cattle;

157,953,333 bushels of potatoes loss (10 per cent of total production).

The potatoe furnishes 25 per cent of the necessary food of the people of the German empire.

In the families of the German workingmen potatoes constitute 50 per cent of the food consumed.

Dried Potatoes or "Flakes"

The drying of potatoes is almost an unknown art in the United States, while in Germany it is a well established, profitable business.

In Europe potato flour is used regularly, and special cookbooks are published for its utilization in all kinds of bakery goods. The immigrants from northern Europe, accustomed to the use of potato flour, have created a market for that commodity in this country. The last government report we could obtain—1913—showed 16,710,498 pounds of potato flour and starch imported. The war cut off the supply, but the demand still exists and there is an excellent chance to make big money manufacturing potato flour in this country from the unsalable potatoes and the culls, now almost a total loss.

Converted Into Mashed Potatoes

Potato flakes can be turned almost instantaneously into mashed potatoes, the great American "national dish," and when put up in neat and attractive cartons, sold at the grocery, the flakes certainly will find a ready market. In mining and logging camps, where fresh potatoes are scarce, flakes would fill a long-felt want. Flakes would also be welcomed by the busy housewife in large cities. "Bring to a boil and serve," which has been the slogan for other commodities, would be appreciated and accepted to save the trouble of boiling and mashing of potatoes.

But where potato flakes will become indispensable, once introduced, will be in the army and navy and the fitting out of camping parties. Other vegetables can be canned, but the canning of potatoes has not proved to be a success. Dried potatoes can be kept almost indefinitely, and besides this, another marked advantage of the drying process is, it reduces the weight of the potato about three-fourths, and this permits the shipping of the potato in dried form great distances without the danger of deterioration.

Before the European war the Chicago importers sold potato flour at 5 and 6 cents per pound in bulk.

Composition of Potato Flakes

The dried flakes ready for use have the following composition:

Moisture	12.0%
Albumen (protein matter)	7.4
Fat	0.4
N-free extract	74.0
Fibre	2.3
Ash	3.9
	100.0%

Naturally the yield of flakes depends upon what substances are in the raw potato and their quantity.

As Food for Livestock

Added to the use of flakes for human consumption potato flakes is a most important feedstuff for farm animals.

Horses eat the flakes readily and during a long period show no aversion to the food. Fed on flakes, the animals have a noticeable "better fed" look, and they perform hard work without any bad effect. No indigestible food is found where flakes are fed. Colic is less common.

Health, working capacity and endurance are maintained by the use of potato flakes. The same good effect is apparent when the potato flakes is used for swine.

Naturally potato flakes lacks protein matter and this substance must be supplied by one of the other ingredients of the ration. (This is true of the other feedstuffs having high starch content.)

How Flakes Are Made

Different means have been proposed for drying potatoes, but one only has become a commercial success.

The successful process is one of great simplicity and consequently lends itself perfectly to the establishment of the small country unit, the ideal end. This process consists in steaming carefully cleaned potatoes, mashing, and drying the mashed material on revolving steam drums or cylinders.

Composition of Raw Potato and Yield of Flakes from 100 Pounds Raw Potatoes

Starch content	12	14	16	18	20	22	24	lb.
Dry matter content	17.8	19.8	21.8	23.8	25.8	27.8	29.8	lb.
Yield potato flakes containing 15% moisture	20.9	23.3	25.7	28.0	30.4	32.7	35.1	lb.
Yield of potato flakes	12.54	13.98	15.42	16.8	18.24	19.62	21.06	lb.

It will be of interest to make available in-formation on the subject of how much starch may be obtained from potatoes. The following table gives this information:

Yield of Dry Starch per 100 Pounds Raw Potatoes

% Starch in Raw Potatoes	Very Good Factory Work	Good Factory Work	Medium Factory Work	Poor Factory Work
12	10.8	9.9	8.4	5.4 lb.
14	13.2	12.3	10.8	7.8 lb.
16	15.6	14.7	13.2	10.2 lb.
18	18.0	17.1	15.6	12.6 lb.
24	25.2	24.3	22.8	19.8 lb.

In the production of potato starch there is produced a by-product of some value in the feeding of domestic animals. This by-product, potato pulp, has the following composition:

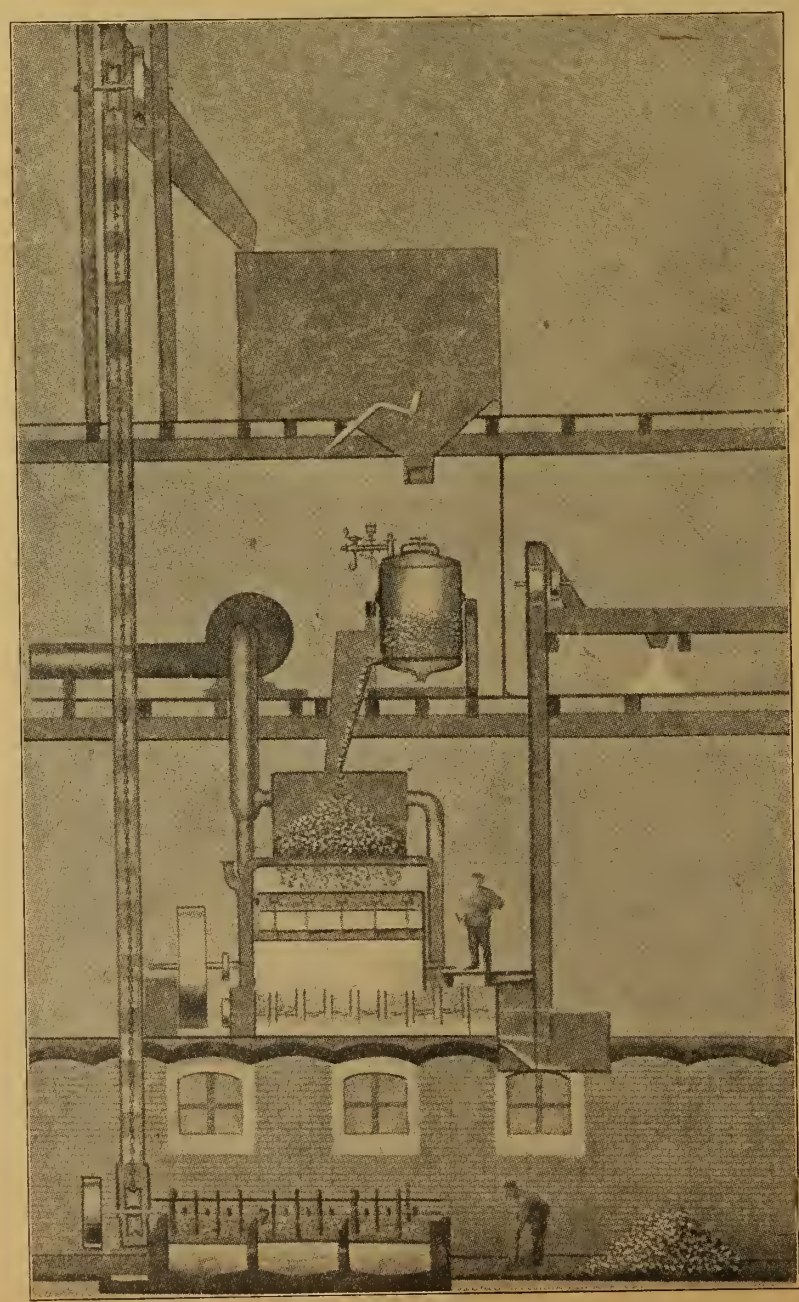
Water	86.0%
Ash	0.4
Fibre	1.8
Fat	0.1
Protein	0.7
N-free extract	11.0

The nutritive ratio of this potato pulp is a very wide one, namely, 1:14.6.

This pulp may be fed cooked or raw, but on the whole the results from feeding the cooked pulp have been the better. To balance this ration dry substance and protein are needed and the following ration for a thousand-pound milch cow is a good one:

8 lb. hay.
50 lb. pulp.
7½ lb. straw.
2 lb. cotton seed meal cake.
1 lb. palm oil meal cake.
½ lb. meat meal.
½ lb. peanut meal.

There are many localities in the Rocky Mountain states where potato growing flourishes because of naturally favorable soils and climate, where manufacturing processes such as outlined might be profitably developed. This is particularly true in reference to the making of potato flakes, and there are possibly a few localities where the manufacture of starch would prove feasible.



This Cut Shows the Simplicity of Process of Manufacturing Potato Flakes, or Dried Potatoes

Fifty Years of Wheat Growing

Figures giving the yield and value of the wheat crop of the United States for 50 years have been published as Bulletin No. 514 by the United States Department of Agriculture. This bulletin covers all the years from 1866 to 1915. It shows that despite the present high prices we have not yet reached the level of those in the years immediately following the Civil War. During the 10-year period from 1866 to 1875 the average price of wheat in this country was 108.6 cents (in gold). For the 10-year period from 1906 to 1915 the average price was only 86.8 cents. The year 1886, in which the Department of Agriculture began its series of continuous reports of the important crops, marked, however, the high level for wheat. From that time, in a number of marked fluctuations, the price dropped until, in the 10-year period from 1886 to 1895, it was down to 68.3 cents. The lowest point ever reached was in 1894, when the average price was 49.1 cents.

On the other hand, the average yield per acre has been steadily increasing. In 1866 it was 9.9 bushels and 16.9 in 1915, an increase of 7 bushels an acre. This increase has, of course, been marked by declines in bad years, but the averages for the five 10-year periods from 1866 to 1915 show a steady increase, from 11.9 bushels, average in the decade 1866-1875, to 15.1 bushels in the decade 1906-1915.

The Problem of Germination in Semi-arid Soil

SEEDS NEED 20 PER CENT MOISTURE TO MAKE GOOD START

E. R. PARSONS

IN THE eastern states where there is plenty of rain, the germination of seeds is not a problem that demands the earnest consideration of the farmer; but in the dry farming country, especially in dry years, this subject is one of much importance, for poor germination means a reduced crop, and perhaps no crop. Seeds require from two to four times their own weight of water in order to germinate properly, therefore free water in the soil is indispensable.

Once established plants can live and absorb moisture from the soil when the water content is as low as 8 or 10 per cent; but for the germination of seeds some 20 per cent or more is needed.

In our ordinary western soils the water commences to move by capillarity at about 15 to 17 per cent, according to the quality of the soil; but below this amount the film water which is wrapped around the granules remains where it is, and cannot move to the seed to assist in germination. Therefore to promote the growth of newly planted seed, there must first be sufficient precipitation to soak them up, and then enough free water in the soil to carry them until rooted.

The hair roots commence to appear in a very few days after sprouting, and the plant is then practically self-supporting without free water, for these hair roots possess the faculty of absorbing film water; they are the tongues which lick the moisture off the soil granules.

This is the Critical Time

It is evident then that the critical time is from the swelling of the seed to the period when the hair roots are developed, and in order to meet this emergency the farmer must prepare his seed bed accordingly.

The most important operation towards this end is the proper packing of the seed row. The philosophy of it is this—the more dense the soil the greater the capillary attraction for free water. In the same manner that a brick will steal water from a sponge so the dense or more solid soil will take from the looser; therefore on account of the packing, the water is drawn as if by a magnet from the looser soil to the seed rows.

This is also a good argument for not over packing the whole surface of the seed bed, for if this is done the seed rows have no special advantage over the rest of the field. For the above reasons crops that are broadcasted and harrowed in are much more likely to dry out in the sprout, between showers, than those which are put in with a press drill.

It is possible also to overpack the rows, particularly those of alfalfa in a heavy wet seed bed. It is best to plant these fine seeds always at the wettest season of the year, which is usually in the early spring, and use chain drags for packing purposes. Many a stand of alfalfa and clover has been lost thru a crust forming in the seed row on account of too much packing, especially on clay land. On account of the difficulty in properly germinating the seeds of such crops as winter wheat, fall rye, etc., in the ordinary dry weather of October and November, we always recommend the early planting of fall crops, in order that the seed may be thoroly soaked up by the late rains which so often come about the end of August and beginning of September.

Do Not Plant Shallow

They should also be drilled in about three inches deep, for if planted shallow there is always the danger of sprouting after a light shower and then drying out before the arrival of more rain to keep them going; but when planted deeply there is little danger of this, for when the precipitation is sufficient to go into the soil three inches deep and germinate the seed, there will be enough also to establish the plant.

There are some seeds such as corn which often do not germinate satisfactorily even when the soil conditions are right. All large, starchy seeds absorb hydroscopic moisture in damp weather, especially the germ which sometimes contains as high as 20 per cent of water, altho the seeds themselves appear perfectly dry. It is this moisture which ruptures the cells and destroys the germ when the temperature falls to near zero. Ordinary freezing seldom injures a seed, for the reason that the viscid matter in the germ cells does not freeze as easily as the water or even sap; but such seeds as corn, beans, sorghum, etc., must be protected from low temperatures which may freeze the germ solid.

The germinating potency of seeds lessens with age, especially after the fourth year. This deterioration is due to the delicate nature of the dormant protoplasm in the germ, and the unstability of the carbon elements composing the matrix, which become more and more oxidized as time passes.

Indigenous seeds do not rot in the ground, and may remain uninjured for years until brought to the surface by some agency when they commence to grow. On the other hand, exotic seeds, such as corn and other semi-tropical varieties, rot very easily with much moisture at low temperatures.

Germination Under Difficulties

There have been several years in the history of dry farming when there was not sufficient precipitation to cause the presence of free water in the soil which is necessary to germinate the seed for spring crops, but there was in each of these seasons enough film water to keep them going until the late rains, if the germination could only have been accomplished.

Many farmers not knowing how to overcome the difficulty were unable to raise crops. On every dry farm which has been properly tilled to conserve the winter precipitation we find a damp subsoil in the spring, whether the season is dry or not. The way out is to plant in this subsoil. We first soak the seed, then plow out the row down to the moisture; plant in the bottom of the furrow and cover deeply. When the plants appear above the furrow the cultivator breaks down the edge, and after a few working the rows fill up and become level, the roots being established at a depth inaccessible to drouth.

Any row crop may be grown by this method when there is not sufficient moisture for the usual procedure; but the crops which would make the most feed for stock under such conditions are corn, sorghum or Sudan grass.

Garden Seeds

Some of the finer garden seeds often fail to come thru for the same reason as some field seeds. They sprout and dry out. The rule for all these is to keep them wet until you can see the leaves. Such seeds as lettuce, petunias, carrots, etc., cannot be covered deeply on account of their being too small—the sprout is not large enough after germination to force its way thru. It is a great help with these to water by hand and cover with a gunny sack, which will keep the ground wet for a day or two, and repeat as often as necessary. Some seeds, like those of the canna, are slow in germinating on account of the hardness of the shell. All of these will sprout readily if a small hole is filed thru the outside shell down to the white to allow the water to enter.

Tree Seeds

The trick in raising ordinary deciduous trees from seed, such as the locust, Russian olive, boxelder, catalpa, etc., is to obtain the seed from the tree as soon as ripe and plant immediately. A good percentage usually comes up the following spring. The raising of evergreens from seed requires expert work and it is better to buy the young trees than to waste time trying to raise them. In tree seeds as well as in alfalfa and all clovers, etc., extra hard specimens are always found which sometimes will not germinate for months or even years. These of course could be nicked or sand papered to reduce the thickness of the shell; but since the percentage is usually small it would hardly be worth while.

Alfalfa's Important Place on the Non-Irrigated Farm

SOIL AND CULTURAL REQUIREMENTS THAT INSURE SUCCESS

PHILO K. BLINN

Alfalfa Specialist, Colorado State Experiment Station

ALFALFA is the most dependable forage crop in the western states where irrigation is practiced, but under strictly dry-land conditions it has not been regarded much of a success, except in rather limited areas along the creek beds where the land has moist subsoil, yet in recent years there have been numerous experiments and tests which have demonstrated the fact that alfalfa has a place in dry-land farming, if certain conditions and requirements in its cultural care are duly considered.

Failures with alfalfa on the non-irrigated lands can generally be attributed to one or more of the following causes: The selection of unsuitable soil conditions; attempting to start alfalfa on land without previous soil preparation; sowing seed on a poorly prepared seed bed; sowing entirely too much seed; disregarding any cultural care to conserve moisture or control weeds.

Alfalfa is a drouth-enduring plant when its roots once become well established in some deep subsoil moisture, but it is a mistaken idea that alfalfa roots will penetrate thru dry soil to moisture. It is essential that there should be moisture in the soil to considerable depth to succeed in starting alfalfa, and except in rare instances it is useless to attempt to seed alfalfa on dry land that has not been previously deeply plowed for several years so that moisture may have penetrated to at least two or three feet, and it is also unwise to sow alfalfa in the thick broadcast methods that are usually practiced on land under heavy rainfall or irrigation.

In dry-land conditions a cultural system that will permit cultivation to conserve moisture and control weeds is absolutely necessary. There are at least three conditions in the dry-land districts under which the farmers could be advised to sow alfalfa seed: First, along the creek beds or water courses, where the moisture in the subsoil from the underflow may often produce abundant crops of alfalfa hay, or where a pumping plant can be utilized to advantage for irrigation.

Second, in locations where a field might be irrigated from flood water from higher grounds, by collecting the "runoff" and conducting it to fields that were adequately ditched and furrowed to receive the water. Doubtless there are many such locations thruout the dry-land sections where this could be accomplished.

Third, on deep loamy soils that have a high coefficient of moisture retention that is not too sandy. Such types of soil, if properly handled with the right cultural methods employed, have produced fairly successful crops of alfalfa hay. Probably when the conditions and requirements for seed production are better known, some of these types of soil in certain districts will also be adapted to alfalfa seed production, as some of the tests and experiments indicate that alfalfa seed can best be produced under rather dry conditions, and there is a great need of an alfalfa seed growing industry for Colorado and the whole United States.

Variety for Dry Land

Certain varieties of alfalfa have not proven to be more resistant to drouth than others, but experimental tests have shown that the hardy underground stooling types of alfalfa are better adapted to dry-land conditions, as they have many more lateral roots near the surface, which affords a better root pasture to appropriate the moisture from storms, which is the only source of water to the plants. Hence, we would recommend the Grimm's or Baltic strains of alfalfa as having given the best results so far in the tests and experiments. It has also been shown that even with those strains there is a great opportunity to improve them by seed selection. The commercial name of a strain of seed does not signify much, for there has been so much misnaming of different seeds. A more important point is, whether the seed has been systematically selected or bred for the purpose desired.

Selecting the Soil

In preparing to seed alfalfa on dry land the selection of the soil that will best retain moisture is of first importance. Heavy soils or soils underlaid with coarse sand or gravel will dry too rapidly and should be avoided, but a deep sandy loam that will not crust hard, but almost form its own soil mulch as it dries at the surface, is the soil best adapted to grow alfalfa under dry-land conditions.

Preparation of the Soil

Land intended to be seeded to alfalfa should be deeply plowed for a year or two previous, in order to establish moisture in the subsoil; and if possible it should be summer fallowed the season before sowing the alfalfa, in order to store moisture and eradicate weeds which are a serious menace to starting young alfalfa. The preparation of a well settled seed bed is the next essential step. The soil should be firm enough to establish capillary action between the seed and the subsoil moisture.

Sowing the Seed

Alfalfa seed should be sown at the time when the most moisture will be present for germination. In eastern Colorado it is apt to be from the first of May to the last of June. It is often advisable to let the weed seeds germinate well, then destroy them by shallow cultivation, and then immediately sow the alfalfa seed. The seed should be sown with a shoe drill, seeding about one to one and a half inches deep, just so the seed are pressed

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Legislation for Agriculture

The bills passed by the Colorado legislature affecting the Agricultural College and the farming industry generally are as follows:

House Bill No. 156—An act for levying a tax for the support and maintenance of the State Agricultural College; provides for a levy of four-hundredths of one mill.

House Bill No. 137—An act for levying a tax for construction, equipment and furnishing of buildings for institutions of higher education of Colorado; the levy provided for is thirty-hundredths of one mill for all the institutions; of this the Agricultural College will receive six-twentieths.

House Bill No. 159—An act to levy additional tax for the support and maintenance of an experiment station at the State Agricultural College; provides for a levy of two-hundredths of one mill.

Senate Bill No. 237—An act to accept and comply with the provisions of an act of congress entitled "An act to provide for the promotion of vocational education; to provide for co-operation with the states in the promotion of such education in agriculture and the trades and industries; to provide for co-operation with the states in the preparation of teachers of vocational subjects; to appropriate money and regulate its expenditure," and to provide for the administration of these provisions by the State Board of Agriculture, and for the appropriation of necessary funds; provides for the acceptance of terms of the federal bill for vocational education, instructs the State Board of Agriculture to meet the federal apportionment in part out of funds appropriated for the maintenance of the secondary schools under its control, authorizes and employers the school boards of first, second and third-class districts, county high schools and consolidated schools to co-operate in the work and gives them the right to use a part of their money for this purpose; this bill carries no state appropriation whatever. An amendment eliminated the appropriation referred to in the title.

House Bill No. 150—An act to make an appropriation to the State Board of Agriculture for diffusing among the people of the state useful and practical information on subjects relating to agriculture, the mechanic and household arts, markets and marketing, and to encourage the application of the same; provides $10,000 annually for general extension work, such as farmers' institutes, demonstration trains, marketing and other extension work not provided for by Smith-Lever fund and the expenses of which cannot be defrayed by the government appropriation.

House Bill No. 171—An act to make an appropriation to the State Board of Agriculture for farm buildings and improvements at the Fort Lewis School of Agriculture, Mechanic and Household Arts; provides an appropriation of $20,000 for farm buildings, including a dairy barn, hay shed and other necessary buildings at the Fort Lewis school, includes also the clearing of land, building of fences, adjusting water rights needed on the farm of the school.

Senate Bill No. 56—An act to regulate the sale, the offering or exposing for sale, and the importing of field and garden seeds; to provide for the testing of such seeds; to make an appropriation to carry out the provisions of this act; to provide a penalty for its violation, and to repeal all acts which conflict with this act; provides for the inspection and certification of all farm seeds, requires that every package sold must carry a label showing the percentage of purity and the percentage of viability together with certain other information; provides an appropriation of $1,500 for the establishment of a seed laboratory and an annual appropriation of $4,000.

Senate Bill No. 197—Provides for the amendment of certain sections of the act of 1909 to prevent the introduction, importation or spread of injurious infectious plant diseases in Colorado; is an amendment to the old horticultural inspection law and empowers the state authorities to quarantine against any farm products shipped into the state or against their distribution within the state, to prevent the spread of any plant diseases or pests, such as the gipsy moth, pine blister rust, alfalfa weevil or tuber moth; the same appropriation as previously is included in the bill.

Safe to Use Milk

I have a cow that has had a lump on her upper jaw for past two weeks, and would like to know whether that is lumpy jaw or not. Is there, to your knowledge, a permanent cure for that, and the treatment to use? Is it safe to use her milk? She is a good cow, giving a little better than four gallons per day now. Has been fresh about a month. I have been rubbing the swelling with liniment, but seems to do no good.—J. G. D., Morgan Co., Colo.

It is impossible from your description to diagnose the case and tell whether or not it is lumpy jaw. However, there would be no risk assumed to use her milk, and I would suggest the following treatment: Give one dram of fodide of potash in feed twice a day for ten days and then miss two weeks and repeat. Lumpy jaw can be cured. While lump is small and confined to the soft tissues, it can be completedly cut out, but you should have a veterinarian do the operating.

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IRON AGE Potato Planter

solves the labor problem and makes the best use of high priced seed. Means $5 to $50 extra profit per acre. Every seed piece in its place and only one. Saves 1 to 2 bushels seed per acre. Uniform depth; even spacing. We make a full line of potato machinery. Send for booklet today.

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Urgent demand sent out for farm help by the Government of Canada. Good wages. Steady employment. Low Railway fares. Pleasant surroundings. Comfortable homes. No Compulsory Military Service. Farm hands from the United States are absolutely guaranteed against Conscription. This advertisement is to secure farm help to replace Canadian farmers who have enlisted for the war.

A splendid opportunity for the young man to investigate Western Canada's agricultural offerings, and to do so at no expense.

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AMERICAN SHEET AND TIN PLATE COMPANY, Frick Bldg., Pittsburgh, Pa.

Eradication of the Prairie Dog

FORMULA AND DETAILS OF THE PEST LAW

PRAIRIE dogs on a badly infested quarter section of pasture destroy enough grass in one year to keep eight cows. In Adams county, Colorado, the farmers have banded together to stop this loss. Six townships have been organized into a prairie dog eradication district. The territory included in the campaign covers 138,240 acres, of which about 55,000 acres are badly infested. Poisoned grain is the means used for destroying the "dogs," the work being under the immediate supervision of County Agriculturist George R. Smith.

For eight or ten years the farmers of eastern Adams county have been fighting prairie dogs, but because of the large areas of uncultivated land held by non-residents, the farms have time and again become reinfested. In the present campaign, which is being handled under the new pest law, the non-resident who fails to join with the farmers in a voluntary cleanup is compelled to do so.

The cost is estimated at about 8 cents per acre, including poison and labor. At that rate it will cost $4,500 to rid the six townships of the prairie dogs, but the saving in grass alone, not to speak of growing crops, will amount to $13,824. Just what damage has been done annually to growing crops in the six townships has not been estimated, but the losses have been large.

Prairie dog eradication, as well as the destruction of other crop pests in Colorado, is under the direction of the state entomologist, Prof. C. P. Gillette. The deputy in charge of pest inspection is William L. Burnett, who together with County Agriculturist George R. Smith and the writer, went over the district in Adams county recently to observe progress of the campaign. This was during March and the weather had been too cold to permit of much work up to that time. The farmers, however, were prepared for an effective campaign. The county agriculturist had prepared plats of the six townships, marking thereon the land ownership, and sending notices alike to residents and non-residents. The notice to non-residents included the following warning:

"We are not anticipating the necessity of compelling you to do this work, as we believe you will be glad to do your part in promoting the agriculture of this section, but we wish to call your attention to the clause relative to the enforcing of the pest law. Under section 6 of this law the officer in charge may have the prairie dogs destroyed on said land and cost of same charged against the land and collectible as taxes on the failure of the owner to destroy same, when given a written order to do so. In section 7 of the same law there is a provision where non-compliance with any notice or direction shall render the offender liable in an action for debt for not less than $25 and not more than $300."

Four men in each of the six townships have been appointed pest inspectors and they see to it that the work is carried out according to instructions. Poisoned grain is sold to the farmers by the state at actual cost. The following formula has been developed by the state entomologist's office and found effective for both prairie dogs and ground squirrels:

PART 1.

Oats	14 quarts
Strychnine, alkaloid powdered	1 ounce
Starch	½ pint
Water	1 quart

PART 2.

Knox gelatin, No. 1, plain	1 box, 2 envelopes
Baking soda	1 ounce
Dark brown sugar	½ pound
Water	1 quart

DIRECTIONS.

Treat the grain first with Part 1, as follows: Dissolve the strychnine in the quart of water, add the starch and stir until it is all dissolved; put over fire and heat until starch begins to thicken, stirring constantly.

Pour the poisoned solution over the grain, thoroly mix until each grain is evenly coated; let stand for five or six hours.

Re-treat the poisoned grain with Part 2, as follows: Dissolve gelatin in warm water (not boiling), add soda and stir until it stops foaming, then add sugar and when dissolved, pour over the poisoned grain and again mix thoroly; spread and dry.

One teaspoonful of the poisoned grain is sufficient for each burrow. It should be placed on dry, hard surface outside the burrow.

Inspector Burnett states that usually one scattering of poisoned grain is sufficient to accomplish the purpose, but sometimes the ground is gone over a second time and, in a few cases, a third time. The usual cause of failure, when any occurs, is carelessness in following directions. Sometimes the grain is placed in the mouth of the burrow. In that way it is covered up when the animal scrambles to the surface and there are no results. Oats has been found the best grain to use, as it is not so apt to be picked up by birds as is wheat. Cattle or horses cannot pick up the poisoned grain from the ground. Hogs or sheep might, consequently stock of that class is kept from the infested areas during the poisoning season.

The law was amended in 1915, empowering the officer in charge to destroy the pests upon the land of non-residents, assessing the cost against the land and providing means for collecting expenses incurred in the work thru a lien upon the property. The amended law also provides that pest eradication districts may be formed upon petition of a majority of resident land owners, instead of the entire acreage, as formerly. These amendments are making it possible to permanently rid the land of the destructive little animals.

Idaho Potato Growers Organize

Idaho potato growers have formed an organization, modeled after that of Colorado and in line with the educational program put forth by the National Potato Growers' association. Prof. E. R. Bennet, of the Extension department of Idaho State University, is secretary-treasurer of the association. He was formerly located in Colorado, where he did effective work in promoting better methods of potato production. Prof. Bennett has issued a statement outlining the program of the Idaho association from which the following is quoted:

Many of our better growers realize that if Idaho is to have the great, permanent potato growing industry that the natural conditions warrant, we must have better standardization of the crop and a better understanding of all growers as to what constitutes profitable potato growing.

With this in mind, a few of the best potato growers in the state held a conference a short time ago and organized an Idaho Potato Growers' association. This society has for its objects:

First, the establishment of a uniform standard for Idaho potatoes.

Second, correcting the nomenclature of the potatoes of the state, many varieties of which are at present misnamed.

Third, securing information as to crop conditions over the whole country and disseminating the same from time to time among its members.

Fourth, the general co-operation among the growers of the state to the end of improving and advertising the Idaho potato industry.

All growers who are interested in this movement are solicited to become members of the association.

Friction

Is the Problem Solved in

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This is to give you a clear understanding of what the Super-Six motor means.

This is why it holds unquestioned the leading place in Motordom. Why it won all the worth-while records. Why it stopped the trend toward Eights and Twelves. And why it gave supremacy—perhaps forever—to this new type of a Six.

What Friction Does

Motion causes friction. You know this in farm machinery. It is friction that finally destroys it.

In a high-speed motor the vibration makes friction a big problem. A large part of the power is consumed by it. The motor's endurance is limited.

So the chief problem in motor car engineering has been the reduction of friction.

Sixes Disappointed

The Six-type was adopted to lessen this vibration. The Light Six, with small bore, was made to lessen it further. But the highest attainment in a Light Six proved a disappointment. Motor friction was not reduced as engineers had hoped.

So some leading makers, including the Hudson, started tests with Eights and Twelves. It was hoped that twin motors, set at angles, would solve the friction problem.

Then Came This

That was in 1915. Many engineers thought the Six type was doomed. That the V-types would displace it, as they had in certain cars.

But in that year Hudson engineers invented the Super-Six. In December, 1915, we were granted patents on it.

Tests proved that this invention added 80 per cent to the efficiency of the Six. And it did that solely by reducing friction beyond any other type.

All Records Won

Last year, in a hundred tests, the Super-Six won all the stock-car records which can prove a motor's value. It won the records for speed, for hill-climbing, for quick acceleration and endurance.

It broke the 24-hour endurance record by 32 per cent. It twice broke the transcontinental record in one continuous 7000-mile round trip.

So, in performance and endurance, the Super-Six has no rival. And that is due to the fact that friction is reduced almost to nil.

The Economy Car

This endurance will probably double the life of the Hudson car. The reduction of friction saves immense power waste.

In addition, we this year add to the Hudson a wonderful gasoline saver.

So the Hudson Super-Six means economy to you. It means a daily saving—in the long run, a very big saving.

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You can have all this, and still save money, because of the Super-Six economies. These are things to consider well when you buy a car to keep.

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HUDSON MOTOR CAR COMPANY, DETROIT, MICHIGAN

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Conservation of Feed

A state of war with Germany is officially recognized. What may the farmers of Colorado and the West do to help? No other patriotic service that they can render is likely to be as important as raising and saving the largest possible crop. The ultimate strength of a nation depends upon its material prosperity. This in turn depends at last upon the products of the soil.

There exists in this and other countries a real shortage of foodstuffs. The wheat crop of Argentina and of Australia is 30 per cent below normal. Comes now the United States crop condition report showing a 65 per cent of normal condition in Illinois and an equal shortage in Nebraska and Kansas. Scarce wheat always means high feed.

There is no other crop now possible by which the western farmer can raise and save as much feed as in corn placed in the silo. The saving is no less a patriotic duty than the effort to raise the largest possible crop.

Grow corn and grain sorghums and build silos!

✦ ✦ ✦

Our Cover Picture

Town lot gardening is a fad this year. In some communities it is an organized movement that will have good results. There is a great deal of enthusiasm just now among the amateur gardeners and the seed houses are cashing in and the hardware men selling rakes and hoes. About July 1 aching backs and blistered hands, coupled with summer sunshine, will militate in favor of the tin can, but a few will stick it out to harvest time. Of course the Boys' and Girls' Garden and Canning Clubs are in it to stay and there will be some good records in the mountain states. Look at the cover picture. That boy and his corn are Denver products of the 1916 gardening season. The photo is by Joseph H. Langer of the Denver Post.

✦ ✦ ✦

The Legislature Did Well

Out of the political smudge that invariably envelops the state capitol when a legislative assembly emits its expiring gasp, there filters thru to us on the Colorado farm the comforting intelligence that we now have a pure seed law; that we have a law to prohibit the importation of disease-infested plants and seeds; that we have an ample appropriation in furtherance of marketing investigations; that counties having no agricultural agents are to receive the benefit of college extension work and, above all, that our state educational institutions are to be provided with a mill levy to care for their permanent expansion, thus relieving them from the necessity of lobbying.

In the passage of these laws the Colorado legislature has only done its duty and what praise is to be bestowed can hardly equal in effect the satisfaction that each member of the assembly who did his part undoubtedly feels because of a duty well performed. It was not all plain sailing. Some good friends of the farmer were "on the job" day and night during the closing days of the session, seeing to it that enemies of progress did not, in the hurry and bustle of the closing days, succeed thru trickery in defeating the will of the people. Every proposed law, good or bad, has its friends and its enemies. There is no public question on which we can all agree. But there is in every session of every state legislature an influence that acts concertedly in the interest of special privilege and against the popular will. It is this influence tnat must be fought and it requires organized effort to fight it.

Colorado has its Farmers' Congress, its Farmers' Unions and its State Grange, all organizations banded together for the advancement of agriculture. It might be well for these organizations, in view of past experience concertedly during the campaign, fully a year in advance of a session, combine forces on important measures that have the approval of the great body of farmers and exert their influence concertedly during the compaign, urging the election of men who either are farmers or have the interest of the farmer at heart. The agricultural industry is today the greatest single industry in Colorado and it has demanded least at the hands of our law makers and gotten what it has only by sweating blood. A little planning ahead and then some true co-operation will make things easier in 1919.

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Potato Organization

On another page of this issue will be found a statement from Lou D. Sweet, president of the National Potato Growers' association and also head of the Colorado growers, relative to the potato situation. He urges experienced growers to plant their usual acreage, in the face of abnormally high prices of seed. He puts his plea on patriotic grounds. Food we must have and potatoes are one of the staples that possess high food value. We in this favored mountain country may have opulent harvests of the precious tubers if we will only do certain things and plant on certain ground. The advice of President Sweet goes also to the general farmer and it is to be hoped that it will be heeded.

There has never been any doubt about the advisability of potato culture in certain favored localities in the intermountain states. But we here, as elsewhere the country over, have had our marketing grief. This problem is now nearer of permanent solution than ever. Great progress has been made in systematizing the distribution of potatoes. The United States Bureau of Markets has been of wonderful help in this regard. But governmental efforts count for little without the co-operation of the growers, and co-operation necessitates organization.

The Colorado State association has over 150 members, who for their dollar a year get the advantage of a complete report on potato conditions the country over. They are a part of the national organization. This membership should be doubled before the year is over. Idaho recently got into the game and the growers are eager for the benefits that come to them in an educational way and in marketing their product intelligently. A short time ago President Sweet was called to Nebraska to help the growers in the Kimball district form an association.

Some of the Canadian provinces are eager to join hands with the United States association and before long we shall perhaps have an American Association of Potato Growers that will give its membership a comprehensive idea concerning world conditions in potato production and marketing; will facilitate an exchange of seed; will bring about standardization of varieties; will emphasize better quality and set on foot a campaign of education among consumers that will result in a greatly increased consumption of potatoes. It pays to organize.

✦ ✦ ✦

Orchard Preparedness

At this season of the year the fruit grower in the mountain states keeps one or both eyes on the thermometer. The critical time is here. Within the next few weeks the fruit crop is made or destroyed. Localities ranging from 4,500 to 5,500 feet above sea level may look for almost anything in the line of weather at this season of the year. It is the uncertain season. In Denver, for instance, the average date of the last killing frost in spring is May 6th, yet there was one occasion when this frost occurred just a month later. At Pueblo the records show the average date of last killing frost to be April 26th, yet one year it came on May 23d. At Grand Junction the average date is April 14th, and the records tell us of a killing frost as late as May 15th. Nothing stronger could be put forth in the way of an argument for preparedness. There is only one method of frost insurance and that is the smudging method. A Colorado grower, writing in a recent issue of Western Farm Life, says he has come to the deliberate conclusion that smudging, as a business proposition, does not pay and does not appeal to him, but just the same he is prepared this spring to "smudge and smudge hard." Fruit growing is a business of high risks and the consumer should pay the price of preparedness, and he will pay it if the fruit is first class. No other kind is worth saving. Therefore, after the smudge let us spray.

✦ ✦ ✦

Plant Some Kafir

Some winter killing or blowing out of wheat is reported from the plains sections. Farmers who have had this experience will find it profitable to replace the destroyed fields by planting one of the grain sorghums, kafir, milo or feterita. Where the nights are too cool for kafir, or the season too short to mature it for grain, milo or feterita may serve the purpose. These crops stand more drouth than corn, make a greater yield of grain and just now are bringing higher prices. A cash market has been developed for them. Fed on the farm they answer the purpose of corn for all classes of stock, being unexcelled for forage or ensilage and having as grain almost the same food value as corn. The chief trouble with the kafirs on the higher plains is difficulty in getting acclimated seed. This will not be overcome until the farmers make a start with whatever seed is available and then select their own seed from this planting. Meat production on the dry land farm will never become attractive until we can grow a greater tonnage of grain and forage per acre than is possible with the average dry land corn.

Weak in Legs

I have a colt seven months old that cannot stand on its legs. It eats and drinks well. What can I do in such case?—P. A. G., N. Mex.

This is an exceptional case. The bones and muscles of the legs are improperly developed and it will be necessary to strengthen them by giving the mother plenty of feed rich in protein and lime such as alfalfa, bran, red clover, etc. Lift the colt up on its feet a half dozen or more times a day and help it to nurse. Give it good clean straw on which to lie and nature will doubtless bring about a normal condition.

THE FARMER'S PATRIOTIC DUTY

This nation has enlisted in the world war on the side of the Allies. It is the duty of every citizen to help the government to victory and peace. Until called upon to bear arms or perform other active war service, every ablebodied farmer in the intermountain states must face the job of growing food and feed, not only for our own needs, but to supply OUR Allies. Tremendous damage to life and property has been wrought by warfare in Europe, but the nations involved have shown a surprising ability to recover from staggering blows that in former days would have meant defeat. There is one enemy that each and all of the belligerents fear, and that is HUNGER. The food supply may yet be the deciding factor. Should Germany's submarine campaign succeed it would mean starvation for England. On the other hand, the Allies have found their strongest weapon the depletion of food supply for the Central Powers.

To maintain armies in the trenches the Central Powers have been obliged to keep their non-combatants on short rations. The restrictions are becoming more galling with every passing week and political unrest, especially since the Russian revolution, has grown formidable in Germany and Austria. Great Britain's control of the seas has been responsible for thus shortening the supplies of the enemy. Germany's resort to ruthless submarine warfare, which includes the sudden murder of all who may venture into the forbidden waters, is an effort to cut off Britain's supplies of food and ammunition, and to fasten upon the world a method of warfare that takes no account of non-combatants or neutrals. This weapon affects the honor, the life and the freedom of trade of the United States, and if Germany were permitted to succeed in establishing its usage, we would be obliged to lick the toe of the Kaiser whenever he bid us do it.

President Wilson has outlined the issue in clearcut fashion in the historic document that was read to the Congress on the night of April 2. He has set us the example of restraint. His calm and dispassionate presentation of the offenses against humanity that have been piled up for a period of two and one-half years by the German government and German military power should move us all to put heart and soul in the effort to win the war, in whatever form our duty may present itself. He has clearly set forth that our quarrel is not with the German people. We have millions of people of German blood among us as friends and neighbors. They are not in sympathy with the ruthless slaughter of non-combatants on the high seas, nor with the form of autocracy that governs their native country. They are Americans, as are those other millions that come to us from many other foreign lands. The great struggle has finally resolved itself into a conflict between government by and for the people and one-man power as exemplified by the German monarchy. On this issue there can be no wavering for an American.

But the time for discussion of causes and issues has gone by. War is a fact that all must face and victory a certainty that must never be left out of thot and calculation. For us on the farms and interested in farming the first duty then is to provide food and feed. Plant the crops that can most quickly be converted into bread, meat and other necessaries, such as potatoes and beans. Look well to the subsistence of the family first of all, for no man can be true to the nation if he fails to be true to his home. Next see to the elimination of waste; adopt careful methods of cultivation, conserve the natural rainfall on the non-irrigated farm and do not waste the water if you irrigate. Make every drop do its duty.

The Council of National Defense has thrown out the hint that the man who plans his farming program so as to produce a surplus of food for use of the nation and her allies is performing a soldier's part. Let us do our duty as becomes citizens and patriots.

Alvin T. Steinel
Managing Editor.

Comment by Farmer Putnam

OUR MISSOURI FRIEND DOES NOT APPROVE OF PRAIRIE DOG ERADICATION CAMPAIGN

Denver, Colo., April 10, 1917.

DID you ever go prairie dog chasin' in a jitney? It's great sport. Me and County Agent Smith (George R.) and a feller name of William Burnett from the agricultural college, was out in Adams county last month on a prairie dog roundup. Burnett is state inspector of prairie dogs, kangaroo rats, gofurs and other varmints that destroys crops. He knows all about the family history and habits of them animals and is a interestin' feller to talk to. They're a gittin' so they knows him and scoots down in their burrows when they see him comin' with a sack of pizen on his back.

Well, me and Mr. Burnett gits offen the same U. P. train at Brighton one morning and County Agent Smith (George R.) meets us at the depo. Smith lives in Brighton—or I better say he boards thar, but his boardin' days will soon be over! Didn't think I knowed it, did you, George?

On the way up to the courthouse I stopped in to see Mr. Isham, editor of the Brighton Blade, one of our livest county seat papers. He is a wide awake editor, publishin' special departments fur Bennett, Strasburg and them other towns in the eastern part of the county, as well as all the news that's fit to print about Brighton. Country editors is hard workin' fellers. They has to boost everything that goes on from church socials to murder trials, no mattor if they approves of it or not. If they don't approve of a thing they keep it to theirselves, or tell it to their wife, if she's a close mouthed woman. They don't dare publish what they think, because if they do somebody would stop the paper and a editor would as soon have a earthquake happen as a subscriber to stop his paper. It's a turrible calamity. I think Alvy Swain ought to have the legislature pass a law to prohibit people from stoppin' their paper. It would prevent much heart disease and nervous breakdown among our editors. Of course it's too late fur this session, but in 1919 Alvy ought to see that it's done. I think Billy Adams would be willin' to do that much fur the newspaper boys.

Well, let's go on with our prairie dog trip. Pretty soon—that is after about three quarters of a hour, we come out to where Sunnydale grange is buildin' their new hall. The Grangers was doin' the work theirselves, some sawin' lumber, some nailin' nails, some putting up two by sixes etc., everybody doin' somethin' to help git the buildin' up. I reckon it's all done by this time and County Agent Smith (George R.) has got another hall to make speeches in. Them county agents has got to be provided for and Adams county is doin' it right. There's a Grange hall or a school house every few miles now.

We called on some of the farmers in the six townships where the prairie dogs is bein' pizened. They scatters oats near the burrows that has been pizened with stricknine. The dog eats the oats, never suspectin' nothin' and then goes down in their burrows when they feels bad and pretty soon they're dead.

I ast Mr. Burnett about some of the yarns they tells about prairie dogs and snakes livin' together in the same holes and he sez, yes they does, fur a little while — maybe a few minutes. After that the snake lives thar alone and the dogs don't live anywheres. He sez it's a good thing to let bull-snakes alone; they eats prairie dogs and they ain't dangerous. They'll swell up and hiss like a punctured tire, but they cain't bite. With rattlers of course it's different. They ain't no friend to man or beast. They kill prairie dogs, but it's better to let the dogs live than to let the rattlers live. It's kind of a precarious business to go about over them dog towns now since the bone dry law was passed, because snakebite medicine is so durn scarce. It don't do no good to use it in homeopathic doses. If you're bit you got to swaller somethin' to offset the pizen and fifty cents worth of Cheyenne juice don't go very fur down, specially if you got hit in the foot.

The legislature didn't go fur enough in passin' the bone dry law. They ought to done like Billy Morgan, the lieutenant governor of Kansas wrote to a farmer when he kicked about the Kansas law. This farmer wrote to Morgan that the bone dry law was a outrage. "If this bill is passed what are we goin' to do fur snakebite medicine?" he wrote. Billy wrote back to him as follers:

"I fully agree with you that the contingency to which you refer calls for earnest attention. Let me assure you that it will have my most serious thot. In fact, I am now considering a measure which is intended to prohibit snakes from biting."

Well let's go ahead with the prairie dogs. Mr. Burnett wrote a bulletin about 'em in scientific language, start-in' off as per schedule by givin' their Latin and Greek names, which was all news to the prairie dogs; they never knowed they was distinguished enough to be called by furrin names, but such is life.

The bulletin sez 32 prairie dogs eats as much grass as one sheep and 256 dogs as much as one cow and that 2,000 dogs on a quarter section gits away with as much pasture as eight cows would eat in a season. That ain't sayin' nothing about the crops they gits away with.

Burnett sez dogs ain't the right name fur 'em. They're squirrels and if somebody hadn't called 'em dogs right at the start, but used their Latin name, they would taste as good as rabbit and could be put on a bill of fare in swell hotels as Cynomys Ludovicianus de gravy, $1.50 (potatoes extry). All the same he sez in the bulletin he don't like to have 'em mentioned when the rabbit is passed. It just goes to show that the name means a awful lot when it comes to eatin'. Now if some durn chump would-a called grouse "prairie buzzard" the law wouldn't have to step in to protect 'em, because they wouldn't be good to eat and nobody would try to shoot 'em fur game birds.

The prairie dogs has lots of natural enemies, such as coyotes, badgers, snakes and now county agents has been added to the list and we kin see their finish. I feel kind-a sorry fur the little varmints. They wouldn't hurt nobody and they could tell some interestin' stories if they could talk. Burnett sez he kin understand their bark to some extent and that their language is limited to a few gutteral sounds, such as warning of the approach of enemies, or the comin' of a Ford over the prairie. It hain't been so many years since the buffalo roamed over the prairie and in them days the dogs didn't see no humans exceptin' the Indians and they didn't pay no attention to the dogs. Next come the range herds and the cowboys, and with them trouble fur the dogs, because every now and then some cow pony would git his foot caught in a burrow and break a bone. Next comes the settlers in the prairie schooners and ox and mule teams; then the homesteaders and now the scientific dry land farmer with his tractor and his auto, so it's the last chapter that's hein' wrote fur the poor prairie dogs, and I cain't hep but feel sorry fur 'em. Of course the coyotes is goin' too, but nobody misses 'em, because they ain't nothin' a feller kin like about a coyote. They're sneakin', thievin' rascals, but prairie dogs is naturally cheerful and the damage they do is just what they has to do to build their burrows and git somethin' to eat. Nature give 'em that instinct to go down in the earth fur their homes, because they wasn't no trees fur 'em to climb on the prairie. But it don't do no good to grieve over 'em. Every dog has his day and the prairie dog's day is come to its sunset.

THOMAS JEFFERSON PUTNAM.

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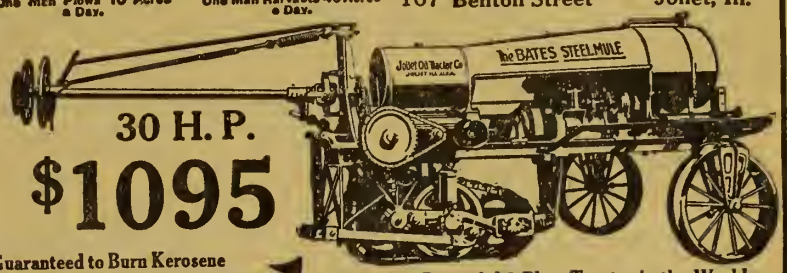

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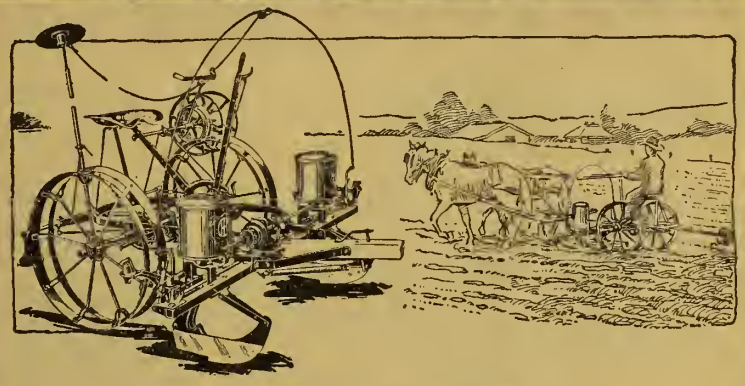

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Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and thru the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Is There Profit in Steers?

Here in Gilpin county oat hay is about $20 a ton. The price is fixed by Denver quotations plus freight. This year it has run up to $26 and possibly higher. Now a young beef animal will eat from two to three tons during the six months' winter feeding period. Where does the stockman get off?

The condition in Grand county cannot be very different, and the International Grand Championship has been awarded there. What is their system of feeding? I don't see how a steer can possibly pay for his board, even when kept over only one winter, as Mr. Ammons recommends. The pasture on my place now is buried in snow, has been for three weeks, and possibly will stay under for weeks more.

Where one man has fenced land and raises hay and builds and maintains the necessary sheds and shelters, while another man buys the cattle to stock the ranch, what could be considered an equitable basis of division? A fifty-fifty split on the increase is often proposed. This looks lopsided to me. One man has, say, $3,000 invested in stock. The other has about double that in land, buildings, etc., puts in all the labor and his entire hay crop. This looks like serfdom to me.—G. K., Gilpin Co., Colo.

The prices mentioned for hay are abnormally high and it is practically impossible to make a profit on that kind of feeding with ordinary beef cattle. I believe that the estimate on the amount of hay required is also a little high. A steer should not need more than a ton and a half of hay to winter on, that is, a calf or a yearling steer. Beef calves wintered at the Colorado Agricultural college from November 5 to June 3 ate 2,200 pounds of alfalfa hay and 788 pounds of barley. They weighed 632 pounds at the end of this time. They would, of course, have consumed over a ton and a half of hay if no grain had been given, but it must be remembered that this was a seven months' feeding period, which is somewhat longer than usual. The usual amount of hay estimated for calves is a little less than 20 pounds of hay per head per day, which would be between 1½ and 2 tons for a six months' winter feeding period. The government estimates the value or cost of producing calves at about $25 per head at weaning time, on the range. Where hay is raised for feeding, it is usually valued at $5 to $10 a ton and at the latter price of $10, two tons would be $20, which, with $5 added for cake, would mean a total cost of $50 at one year old. If the calves weighed 620 pounds, the feeder would not be very much ahead, but his cattle would be in good condition to go on and make lots of cheap gains during the second summer and could then be sold at a profit in the fall.

This is an unusually hard winter and probably a good many stockmen are losing money on the additional feed they are having to buy.

With regard to your question on shares in cattle raising, I believe that a man feeding cattle and doing the work, providing the pasture, etc., should get from two-thirds to three-fourths of the proceeds.—Chas. I. Bray, Agricultural College, Fort Collins.

Covering Potatoes With Straw

I write to ask about planting potatoes. The ground was broken last spring, then harrowed and disked. Now, when it is disked again and then plowed and plant the potatoes and cover with chaffy straw, will that be all right to raise a good big crop of potatoes?

We have nothing but sod land for beans this year. Which will be best to plant—single or double row with a corn planter, with beans about ten or twelve inches apart in the row?—M. M. K., Lindon, Colo.

It might be well for you to make the experiment of covering your potatoes with straw, on a small piece of ground. You can hardly afford to devote much ground and work to an experiment. In planting your potatoes this way, thoroly prepare your seed bed, then plant the seed that will average about 2 ounces to the piece—each piece containing two eyes—quite shallow and cover with chaffy straw as you suggest. If you can succeed in growing them in this way, you will do a big thing for the potato industry. An experiment of this kind was tried a few years ago in Missouri and for a few years they got good results but finally the returns did not begin to pay for the labor. If you want to be certain of a good crop, you had better practice the old method that has been demonstrated successfully. Plow your ground deep, prepare your seed bed, plant in rows about 36 to 40 inches apart and about 2 feet apart in the row. Cover about 4 inches and give intense cultivation.

There is not much difference in planting beans single or double rows, providing you leave the rows at least 3 feet to 40 inches apart, so that you can cultivate them well. On dry land you should be certain not to plant your rows too thick but give them plenty of room so that the moisture will be sufficient to mature the crop.

Distemper

Is there a preventive for distemper? Is it contagious and what can one do to cure it when a horse first comes down with it?

Does it do any harm to pasture alfalfa in the spring from time snow begins until after danger of frost? The soil is sandy. There is enough clay in it that the sheep tramp it pretty hard.

Does it pay to spring tooth harrow hay land? What are the benefits or advantages?—G. R., Utah.

There is a vaccine for preventing distemper but not for curing it after it has once gotten into your herd. Distemper is contagious and it will be well to separate the horses that are affected from those that are not and not allow them to get together or drink or eat out of the same tank or trough.

You would not find it practical to pasture your alfalfa early in the spring, if you want to make several cuttings of hay, especially if the soil is of such a nature that the crust would be hardened thru tramping.

Yes, it is a good idea to renovate your alfalfa with a spring tooth implement—an alfalfa renovator being preferable. The advantage is, it loosens up the crust and aerates the soil so that the plants will grow better.

Time On Homestead

I made application for filing in June, 1915, and received the receipt for my money, but did not get my final papers stating my filing had been allowed until the following April. I have been living on and improving the land since first making the application. Will this time count from the time I filed, or from the time the land was allowed me on making my final proof?

Can a mining company lawfully prevent me from peddling my farm produce in their town where they own the land and buildings? It is a camp of probably 2,000 inhabitants.—W. I. S., Tyrone, N. M.

(1) Your time on your homestead will count from the date on which you established residence and lived on your homestead in conformity with the law.

(2) The mining company has no right to prohibit you the use of the public street, even tho they own the land and buildings.

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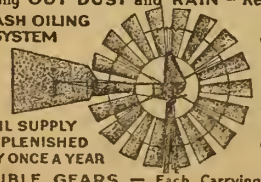
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Feeding the Dairy Calf

Usually a vigorous calf begins the second week to pick at the bedding or other material within its reach, and at that time both grain and roughage of the best possible quality should be provided. Clover hay, alfalfa hay, or, if these are not available, the most palatable roughage on hand should be given the calf after the second week. If alfalfa is used, care should be taken that it does not cause scours; this feed should be fed sparingly at first and increased only after the calf gets accustomed to it. The essential points are that the roughage should be of good quality and kept clean.

Silage may be given after the calf is one month old, but the utmost care should be observed to be sure that it is fresh from the silo. For this reason very young calves, except in the hands of a very careful feeder, should not be fed silage, as it ferments rapidly when exposed to the air. Care should be used in starting with silage, using only a little at first and gradually increasing the quantity as the animal becomes used to it. Generally there is no danger that the calf will get too much roughage that is clean and of the proper quality.

Whole milk is "nature's balanced ration" for the calf. When skim or separated milk is fed, other feeds are used to supply the fat which has been removed. Proprietary calf feeds or meals, for feeding with separated milk, have been put on the market. Many of these have merit, but by using the feeds usually found on the farm or in markets near by the farmer can generally mix a grain ration which is as good and costs less.

Wheat bran is a grain which is readily taken by young calves. Inasmuch as one of the essential points is to induce the calf to eat grain as early as possible, bran in many cases is one of the ingredients in the mixture. Corn, a feed very commonly found on the farm, has an excellent physiological effect upon cattle of all ages and to a great extent may take the place of the fat removed from the milk. It is, therefore, one of the very best grains to use with skim milk. * * * The following mixtures are recommended:

(1) Three parts cracked corn and one part wheat bran.

(2) Three parts cracked corn, one part wheat bran, one part ground oats.

(3) Three parts cracked corn, one part wheat bran, one part ground oats, and one part linseed meal.

(4) Five parts cracked corn, one part wheat bran, one part ground oats, and one part bloodmeal.

(5) Oats, ground.

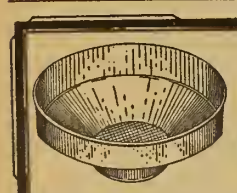
When the calf is in its second week it should begin to receive grain, and when one month old it should eat about half a pound a day. After this time the quantity of grain may be gradually increased, feeding the calf all that it will take until three pounds a day is reached; this will probably be some time during the third month. Grain, when fed with separated milk, should never be put into the milk. It is questionable whether the preparation of grain in any way, such as soaking or boiling, is advisable under any circumstances. Grain should be furnished in separate feed boxes, placed so that it cannot be soiled by the droppings of the calf, but at the same time where the calf can get at it readily. There should be no corners in which wet feeds may ferment, and the utmost care should be taken to keep the grain fresh and clean at all times.—Farmers' Bulletin 777, U. S. Department of Agriculture.

Canada Offers 160 Acres Land Free to Farm Hands

Bonus of Western Canada Land to Men Who Assist in Maintaining Needed Grain Production

The demand for farm labor in Canada is so great that as an inducement to secure at once the necessary help required, Canada will give one hundred and sixty acres of land free as a homestead and allow the farm laborer, who files on land, to apply the time he is working for other farmers as residence duties the same as if he had lived on the land he had applied for. This offer made only to men working on Canadian farms for at least 6 months during 1917, thus reducing the necessity of actual residence to 2 years instead of 3 years, as under usual conditions. This appeal for farm help is in no way connected with enlistment for military service, but solely to secure farm laborers to increase agricultural output. A wonderful opportunity to earn good wages while securing a farm. Canadian Government will pay all fare over one cent per mile from Spokane to Canadian destination. Information as to low railway rates, etc., may be had on application to

J. L. PORTE
Canadian Government Agent
Dunn Block, Great Falls, Mont.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OVERLAND SHOE CO. Dept. 52 Racine, Wis

Feeding Calves

We are feeding the new calves about four quarts of the new milk till they are 6 weeks old and then the skim milk for another six weeks. Is that long enough to feed the milk? How much oil meal or cake would you feed a calf at a feeding? What would you give the old sows when they eat their pigs and what is the cause?—C. E. W., Del Norte, Colo.

I believe you are feeding whole milk a little longer than is necessary. It is not necessary to feed more than three weeks or a month before changing to skim milk. I would start out with a tablespoonful of meal per feed, increasing to half pound gradually.

It is generally supposed that a very common cause of sows eating their pigs is a lack of protein and mineral matter in their ration. The old remedy was to give the sow salt pork to eat, which would supply her with some protein. Feeding 10 per cent tankage in the ration will make a better feed. I would advise giving the sows what alfalfa hay they will eat.—Chas. I. Bray, Colo. Agricultural College.

Cheese from Goat's Milk

(1) Can cheese be made from goats' milk? If so, can it be done on the farm without special machinery?

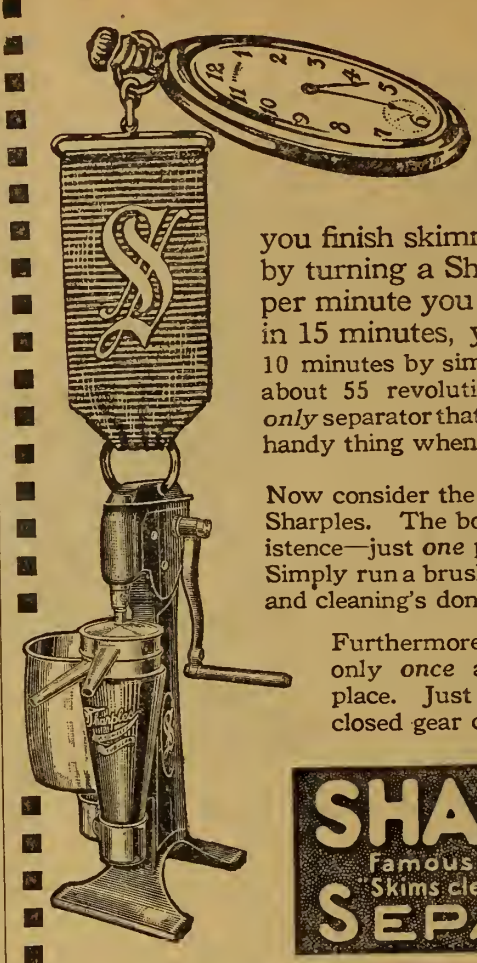
(2) Is there a market in Denver for goats' milk? If so, can you give me address of dealers handling it?

(3) Are there any books published on this subject? If so, kindly give title and publishers.—W. R. B. C., Weston Co., Wyo.

(1) Goat's milk makes most excellent cheese and can be made on the farm without expensive machinery the same as cheese from cow's milk.

(2) There is no market in Denver for goat's milk, perhaps for the reason that it cannot be had in sufficient quantities.

(3) You can get the best information on the use of goat's milk by writing the Department of Agriculture, Washington, D. C. A number of bulletins have been gotten out on this subject.



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The faster you turn the Sharples, the quicker you finish skimming! For instance: If by turning a Sharples at 45 revolutions per minute you get through separating in 15 minutes, you can get through in 10 minutes by simply increasing the speed to about 55 revolutions. The Sharples is the *only* separator that can be "hurried"—a mighty handy thing when *you* are hurried.

Now consider the time saved in cleaning the Sharples. The bowl is the most simple in existence—just *one* piece in it, no discs or blades. Simply run a brush through it once or twice—and cleaning's done!

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Remember that all separators lose considerable cream when turned below speed—*except Sharples!* The Sharples gets all the cream no matter whether you turn it fast or slow. It saves up to $100 a year more than other separators. Cordially welcomed by women, owing to its easy turning and easy cleaning. Over a million Sharples users. Write for catalog to Department 30.

The Sharples Separator Co. - West Chester, Pa.

Sharples Milkers—used on over 300,000 cows daily

Branches: Chicago San Francisco Toronto

$24

Oat and Pea Forage

With what success can oats and field peas be grown mixed? Is it good feed for calves and cows with calves? How much to the acre will it grow in a good season? How much of each should be planted to the acre—G. F. V., Colorado.

Oats and field peas make a successful forage mixture. The mixture is good feed for cows and calves. The amount of feed produced per acre will vary with the locality and the method of handling the crop. From 1½ to 4 tons is not an unusual yield. The amount to plant per acre will vary with the rainfall, irrigation conditions, and to a considerable extent with the previous condition of the land. If the land has previously been in peas 25 to 30 pounds of peas and 20 to 30 pounds of oats will be sufficient. If the land has never been in peas, it would probably be advisable to use as much as 60 pounds per acre under irrigated conditions.—Alvin Kezer, Chief Agronomist, Colorado Experiment Station.

Castor Beans

Please inform me in regard to the law on the planting of castor beans in this state.—C. P. S., Yuma Co., Colo.

We do not know of such a law and believe there is no such law in Colorado.

Wood Churns Unsanitary

Send for our literature on our new steel Churns. Absolutely sanitary, easy to clean, made of seamless heavy steel. will last a life time.

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Dept. 10, Denver, Colo.

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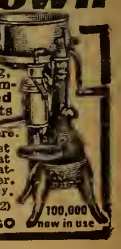

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30 Days' Free Trial Earns its own cost and more by what it saves in cream. Postal brings Free catalog, folder and "direct-from-factory" offer. Buy from the manufacturer and save money.

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"ROUGH ON RATS" ends RATS, MICE, Bugs, Don't Die in the House. Unbeatable Exterminator. *Ends* Prairie Dogs, Gophers, Ground Hogs, Chipmunks, Weasels, Squirrels, Crows, Hawks, etc. The Recognized Standard Exterminator at Drug & Country Stores. Economy Sizes 25c. 50c. Small 15c. Used the World Over. Used by U. S. Gov't. Rough on Rats Never Fails. *Refuse ALL Substitutes.*

Holstein Baby Beef

There is something to be learned from the experience of Charles Smith, a veteran stock farmer of Goodhue, Minn., who has been converting Holstein calves into baby beef with great success. He started with a mixed herd of ordinary beef cattle many years ago When he could afford it he bought a pure-bred Aberdeen Angus bull and three cows of the same breed for the purpose of grading up his herd. He milked the cows, disposed of the old grade cows and the steers for beef and sold pure-bred calves for breeding purposes.

After years of this he found the cost of raising calves for beef from low milking cows almost profitless. His problem was to lower the cost of home-grown calves by getting more out of his cows. He bought ten high-grade Holstein heifers and bred them to a pure-bred bull of the same breed, saving his heifers and re-breeding the cows until he had 20 high-grade Holstein females. Then he got rid of his Holstein sire and fattened off the old grade beef cows, again procured an Aberdeen Angus bull and started to produce baby beef from his Holstein herd.

He knew that a pure-bred Aberdeen Angus bull would beget black calves, without horns, practically every time from any kind of a dam and that this would give him a calf crop uniform in appearance, which is a desirable market qualification. He was after calves of quick growth and cows of milk-producing power and the Holsteins did not disappoint him. He now gets the calves and plenty of milk. The calves have Holstein size and beef type from their sire. They fatten rapidly and bring top figures on the market as baby beef. So Mr. Smith, while still a beef producer, has become also a dairy farmer with plenty of surplus milk to market.

As his cows are heavy milkers, he puts two calves to a cow, making half the cows do all the nursing for six months and selling the milk from the other cows. Incidentally he has lots of skim milk to feed to pigs and calves. Following are Mr. Smith's conclusions as given in the Holstein-Friesian Register:

"First—An Aberdeen Angus bull will take the horns and the white spots off of anything; he never fails.

"Second—A Holstein or half-blood Holstein calf will grow faster than any other kind, if it gets the feed, especially until it is a year old."

"Third—To make the most profitable gains on beef, you have to start feeding as soon as the calf will eat out of your hand, and keep on feeding until the baby beef is ready for market."

"Fourth—Silage is the best and cheapest feed for beef. On well manured ground you can grow only three tons of timothy per acre, and on the same ground you can grow ten tons of silage. We could not make a profit if it were not for the silage used in the fattening ration."

Alfalfa's Important Place on the Non-Irrigated Farm

Continued From Page 5

into moist soil. A garden drill has given the best results in seeding alfalfa seed, as the amount and the depth of seeding can be better regulated and made more uniform than with the average horse drill of any kind.

The most common mistake is made in seeding alfalfa too thickly; the method usually practiced in humid sections or under irrigation is entirely unfit for dry-land conditions.

Experiments and experience of a number of years have fully demonstrated that for dry-land conditions alfalfa should be sown in rows at least thirty-six to forty inches apart, and that the plants should be thin in the rows. With good seed and good conditions a pound of seed per acre should be sufficient, if the seed is evenly distributed. A thick stand of alfalfa cannot be maintained on the moisture that falls on the plains of eastern Colorado, no more than good results can be expected from an overstocked cattle range.

To establish alfalfa on dry land it is necessary to have a thin stand of plants, and all the moisture conserved that is possible, and to accomplish this a system of seeding in rows for intertillage is the best method to pursue.

Cultivation and Tools

One of the difficulties in seeding alfalfa in rows has been the lack of proper tools for seeding, and cultivating the crop in the seedling stage, for alfalfa that is left neglected will become a veritable weed patch; hence, it is desirable to seed on land as clean of weed seed as possible.

The four-rowed sugar beet cultivator is almost an ideal tool to cultivate young alfalfa. Cultivation should be made principally to keep free from weeds and conserve moisture. The surface of the field should be kept as level as possible to facilitate mowing. This can be accomplished by cross-harrowing in the spring.

Probable Adaptability

The possibilities of alfalfa on dry land will vary with the soil, the seasons, and the care, but under good conditions a ton per acre of good hay has been secured for the first crop, and if the season is wet a second crop can be expected. The probable yield of alfalfa seed on dry land is not possible to predict from the meager results at hand, as little attention has been given to systematic work in seed production under dry-land conditions, but it is safe to say there are good prospects when careful attention is paid to all the details.

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You can do this by owning and operating one of these wonderful self-contained flour mills, and sell most of the flour used in your community.

The American (Midget) Marvel is the sensation in flour mills, and is revolutionizing milling. It is the latest improved roller mill, and makes better, purer and whiter flour at less cost, so gives you greater profits. One man without previous milling experience can run it.

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When you purchase an American (Midget) Marvel Mill you become a member of the Community Marvel Millers Association, and you can put your flour up under our nationally advertised brand "FLavo," as shown below. Your mill is then inspected every 30 days by our Service Department to keep you up to quality. We start you off and practically make your success assured.

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Write for booklet and testimonials.
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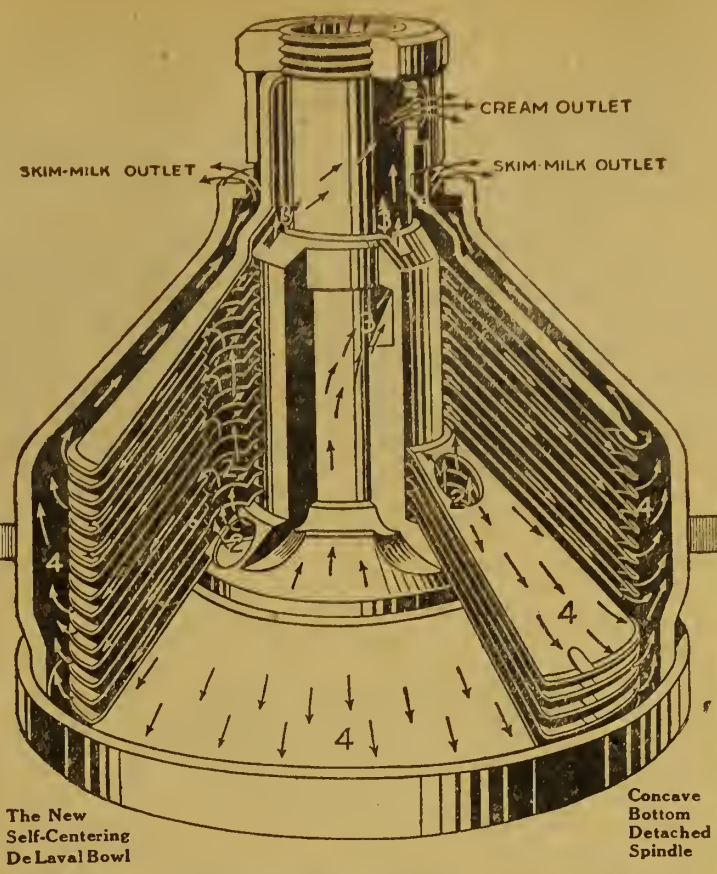

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THERE may be some question as to who makes the best wagon or the best plow or the best watch, but when it comes to cream separators the supremacy of the De Laval is acknowledged at once by every fair minded and impartial man who is familiar with the cream separator situation.

Thousands and thousands of tests, the world over, have proven that the De Laval skims the cleanest.

The construction of the New De Laval keeps it in a class by itself.

It outlasts and outwears all other makes by far, and can be run with much less cost for repairs.

The world-wide De Laval organization, with agents and representatives in almost every locality where cows are milked, ready to serve you, insures that the buyer of a De Laval will get quick and valuable service when he needs it.

More De Lavals are sold every year than all other makes combined.

The New De Laval has greater capacity than the 1916 style, is simpler in construction, has fewer and interchangeable discs, is easier to wash, and the skimming efficiency is even greater.

Each New De Laval is equipped with a Bell Speed Indicator.

Order your De Laval now and let it begin saving cream for you right away. Remember that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or if you don't know him, write to the nearest De Laval office as below.

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Try 100 POUNDS A AND C CALF MEAL

Test It Thirty Days to Prove Our Claims

Let us prove that you can sell your milk for three or four times as much as Calf Meal costs, and turn your calf loss into a profit. Order 100 pounds through your dealer or direct. Use it 30 days. **If you are not satisfied that it does what we claim, return unused portion and your money will be refunded.** It costs less to feed than any other standard meal or home mixture. Contains all nutriment necessary to keep the calf in good condition. Promotes healthy growth of meat and bone. A little added to poultry mash will make chicks grow quicker and hens lay better. Call on your dealer or write today. Sample sent on request.

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ALFALFA SEED FOR SPRING SOWING. From locality where it grows best and most abundantly. Our seed won the Gold Medal at the St. Louis World's Fair, in competition with the world. We also handle White and Yellow Sweet Clover. Write us for prices and free samples. Address McBETH SEED HOUSE, 320 Main, Garden City, Kan.

The Farm Home

MRS. H. T. FRENCH

Questions about home problems promptly answered by letter and thru the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

HOSPITALITY
(By Alice Cary)

The open door, the outstretched hand
Of welcome to the dear home land.

The flowing bowl, the loaf of bread,
The pillow for thy weary head.

The open hearth, where flaming fires
May beckon thee to new desires.

These are the gentle gifts of home,
In trust for thee, if thou wilt come.

One of the important items in keeping our grocery bill at a minimum, is the utilization of left-overs. These, by a little thought, may be converted into appetizing dishes, which no one will recognize as bits from a previous meal.

At the prices of foodstuffs today, we cannot afford to waste ever so small an amount, nor can we afford to feed it to the cats, dogs and chickens.

The water in which peeled potatoes, carrots, turnips, onions, cabbage, cauliflower have been boiled, really contains the most valuable part of the vegetable, the mineral element. This water should be drained into an earthen or granite vessel and used for soups. This, by the addition of meat stock or cream, makes an appetizing dish with which to begin a hearty meal.

Instead of draining the liquor from cans of string beans, peas, tomatoes, into the sink, put into soup jar.

If only a few spoonsful of tomatoes, turnips, carrots, onions, cabbage, cauliflower, peas, beans, rice or potatoes are left, these may be put into the soup by first putting through a coarse strainer. This blends them until not noticeable in the soup except as a thickening and flavor.

Bits of meat, fried, boiled or roasted, may be ground and used as meat loaf or croquettes. Bits of cereal, rice or potatoes may be ground with the meat.

All small pieces of bread should be dropped into a jar, and when a quantity has accumulated, put into the oven and toast, then grind and put into closed jar. They are then ready for use in puddings, croquettes, scalloped dishes or for breading. The larger pieces may be used for toasts or croutons.

Save all stale cake or cookies. The larger pieces may be steamed until soft and then served with a tart sauce. The smaller bits may be ground and combined with a tart fruit and baked into a delicious pudding.

When paring apples for sauce, wash them well and put all the good parings and cores into a saucepan, cover with cold water and boil as long as is required for the sauce. Then put them into a potato ricer or fruit press and press out the juice, strain, return to saucepan, add three fourths as much sugar and boil until jellied. If much apple sauce is used during the winter it is surprising how many glasses of jelly will be added to the jelly closet.

Here are some of my "left-over" recipes. The quantities used may be governed by the amount of "left-overs" and your own judgment.

Bean Loaf

Take Mexican or navy beans, cold beef with a liberal amount of fat and grind. Put in a third as many bread crumbs as beans. Moisten with beef stock or hot water. Season with salt, pepper and sage. Grease baking dish, put in loaf, bake in moderate oven for 20 or 30 minutes.

Onions, Tomatoes and Beans

Grease a frying pan well, slice the onions very thin and fry until slightly browned. Put tomatoes and beans (preferably Mexican) into sauce pan, add the onions and a good sprinkling of red pepper. Simmer until flavors are well blended. Stir often.

Rice and Potatoes

Take as much mashed potato as cold rice, add the yolk of one egg. Whip the white until stiff then beat into the mixture. Drop from fork into hot grease, brown quickly and serve at once.—L. A. S.

PATTERN DEPARTMENT

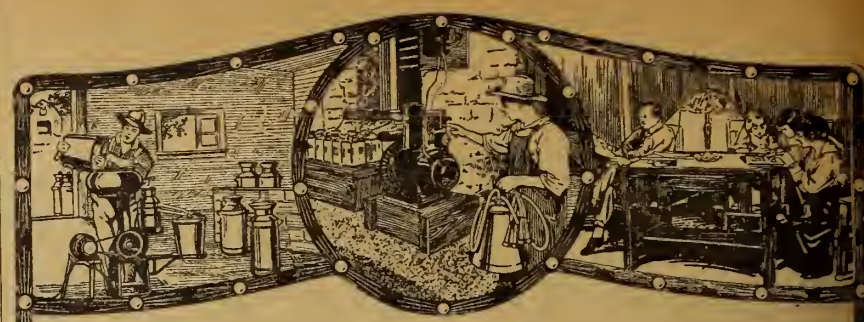
All patterns 10c each. Send all orders to The Western Farm Life, Denver, Colo.

2064—Smart Dress for Mother's Girl. Cut in sizes 4, 6, 8 and 10 years. Requires 3¾ yards 36-inch material for 8-year size. This style is good for any of the materials now in vogue. The neck is finished with a shaped collar. The waist front is lengthened to form a panel, below the belt. The skirt is full and gathered. The sleeve may be finished in wrist or elbow length.

1906—Dainty Model for Party or "Best" Wear. Cut in sizes 6, 8, 10 and 12 years. Requires one yard lining for underwaist and 3¼ yards material for 8-year size. Lawn, batiste, crepe, challie, taffeta, messaline, gabardine, nun's veiling, linen and other wash fabrics are nice for this style. Braid, bands of embroidery and lace are suitable for trimming.

2059—Charming Negligee. Cut in sizes small, medium, large and extra large (44 and 46). Medium size requires 6½ yards 36-inch material. This model is fine for soft crepes, lawns and organides. t is also nice for challie, silk, batiste and voile. The sleeve is cut in one with the front and side back. Panel sections are joined to the full skirt.

2046—House Dress. Cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Requires 6½ yards 44-inch material for 38-inch size. In dotted percale, checked gingham, striped seersucker. This model will be very pretty. It is also nice for poplin, repp, linen, corduroy, drill. for tub silks, gabardine and crepe. The closing is at the side. The sleeve may be in wrist or elbow length. Deep, roomy pockets stitched to form double sections, are added on the fronts.



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And it pays for itself in time and labor saved.
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It furnishes electric power to pump the water, wash the clothes, milk the cows, separate the cream, churn the butter, operate the electric fan and the vacuum cleaner.

Delco-Light is a simple, economical, highly efficient electric plant that requires almost no attention and that runs on kerosene, gas, or gasoline.

There is a Delco-Light Representative in your vicinity who will tell you all about it.

Price complete, with batteries, except in Canada and far Western Points is $275 F. O. B. Dayton

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BARNETT RANCH LIGHTING & APPLIANCE CO., Distributors
1525 Sixteenth St., Denver, Colo.

Sufficient Unto the Day

"What shall we have to eat?" How often the housewife repeats the question. It has taken the writer a long time to learn some of the standard dishes used in the family, the special favorites, and the occasional dainties, but this knowledge once learned makes the selection of menus easy. I shall quote the plan of another writer, which is as follows:

Each day, after an investigation of the icebox and pantry, make a list of left-overs in the left-hand column and a list of the necessary supplies in the right-hand column. Taking into consideration the list of left-overs, menus for three meals may be written in the center column. The articles necessary, aside from the left-overs, for the preparation of these meals may be made note of in the right-hand column, thus insuring that the necessary stock of meats, groceries and vegetables may be ordered to advantage.

I append some menus used on two consecutive days in my own household. They illustrate the fact that left-overs may be utilized to advantage.

Tuesday

BREAKFAST
Apples Poached Eggs on Toast Rice
Coffee

DINNER
Bean and Tomato Soup
Roast Beef Mashed Potatoes
Fruit Celery
Coffee

SUPPER
Minced Beef on Toast Waldorf Salad
Potato Croquettes
Lemon Jelly Wafers

Wednesday

BREAKFAST
Oranges Cereal Scrambled Eggs
Muffins Coffee

LUNCHEON
Brown Stew Bean Cakes
Tomato and Meat Salad
Tea Wafers

DINNER
Vegetable Soup
Beefsteak Baked Potatoes
Creamed Celery Cold Slaw
Rice Pudding
Coffee

The minced beef was hash served with a brown sauce, seasoned with onion juice, chopped parsley, catsup and Worcestershire sauce. Served on toast and garnished with parsley. it makes an appetizing luncheon dish. The Waldorf salad was made of chopped apples and celery with a French dressing, delicately flavored with onion. The potato croquettes were made from two cups of mashed potato, rather highly seasoned, a tablespoonful of soft butter and a tablespoonful of dry grated cheese. Mix well and moisten with well-beaten egg. Form into croquettes and bake until nicely browned.

The brown stew for Wednesday was made from part of the roast.

The bean cakes were made from boiled beans, left from the soup, rubbed thru a sieve with a tablespoon of cream. This mixture was made into small cakes, sprinkled with grated cheese and browned in the oven.

The tomato and meat salad was made from part of the roast and the remainder of a can of tomatoes opened for soup. Soak half a box of gelatin in half a cup of cold water for fifteen minutes. Season highly the canned tomatoes, boil and strain, adding enough hot water to make a pint. Add two tablespoons of tarragon vinegar and the gelatin. When the latter is dissolved and the mixture cooled and beginning to thicken, mix in some diced cold meat. Turn into wetted molds and set away until firm. Serve on lettuce with mayonnaise dressing.

When little Arthur made a visit to his Auntie's farm, he was much taken with all the baby animals and fowls. especially with the ducklings and the baby pigs. When Aunty came to the city a few weeks after she brought Arthur's mamma a setting of hen's eggs. "Aunty," said Arthur, "next time you come, won't you please bring a setting of ducks and a setting of pigs?"

HOME-MADE HOMINY

One-half gallon water, 1 teaspoonful lye; let come to boiling point, and then add 1 quart of corn; let cook from 15 to 20 minutes, then wash until the eyes are all out.

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Spray to Kill the Codling Moth

A WAR OF EXTERMINATION SHOULD BE WAGED

ALFRED M. WILSON

SPRAYING for the codling moth is, for the grower, a costly proposition. It costs the grower approximately $7.50 every time he sprays the average acre, for the cost varies according to the age of the trees and according to the way in which they have been pruned, but the average is not far from what I have indicated. On that basis it would cost $150 to spray the average twenty-acre orchard once, or $750 to spray it five times. The orchardist in the Grand Valley who a few years ago sprayed fourteen times in one season was a victim of his own ignorance — he was a newcomer in the valley — and of the cupidity of the man who did his spraying for him. It is not unusual to find growers of large experience spraying as many as seven or eight times. I am convinced, however, that there is something wrong when a grower feels that he must spray more than five times in any one season. However that may be, it is a conservative statement that it costs the growers in the Grand Valley between $20,000 and $25,000 to spray all their orchards just once and between $100,000 and $125,000 to spray them five times.

For the expenditure of so large an amount of money each season we growers, it seems to me, should have something in the way of permanent achievement to show. We should not, at any rate, be content with keeping the codling moth from converting our apples into second and third-grade stuff. The fact is that notwithstanding the number of times we spray, notwithstanding we may spray only when the experts tell us to spray, notwithstanding we may spray thoroly and systematically, we yet let enough worms by to do serious damage to our fruit before the season is over, and certainly enough to furnish a superb winter colony to carry on the work of devastation the following year. Some of us, the majority, in fact, seem entirely content with this state of affairs. We have, apparently, assumed as an incontestable fact that, like the poor, we shall have the codling moth with us always. And it may be so; but we should not be content with a campaign of control, if a campaign of extermination is feasible.

But what is meant by a campaign of extermination? What is involved in spraying to kill, not to control? First a shifting of emphasis in the work of spraying. Second, no increase in the number of sprays we are accustomed to put on and, therefore, no increase in the spray bill. Third, concentration of the customary five sprays within a period of time within which the greatest possible damage can be inflicted upon the codling moth, his heirs and assigns. And that period, as every grower knows, is the period of seven weeks dating from about the time the apple buds open. That is the period within which the first brood hatches out and enters upon its destructive career. This, it is evident, is the time to strike, to strike hard, to strike systematically, to make the supreme effort of the season; for by so doing it is more than possible that we shall be able to clean up the first brood. If we do that, the day will be ours, the day of victory and rejoicing.

In this campaign of extermination within the prescribed period, the first thing to be considered is the dates on which the customary five sprays should be put on. O. W. Jaynes, a successful Clifton grower who has made a close, scientific study of orchard spraying, suggests the following program:

First spray, the Calyx spray. The date of this spray is variable, due to weather conditions which may be such one year as to hasten, and another to retard, the development of the fruit buds. Ordinarily in this section of the Grand Valley the Calyx spray is put on about the first of May; but this year the Calyx spray will not, because of the prolonged cold weather, be put on probably before the 12th or 15th of the month; but the Calyx spray, whether late or early, will, as we shall see, determine the dates of the remaining four sprays. Their dates, in other words, are relative to the date of the Calyx spray.

The second spray, twenty-one days after the first or Calyx spray. The second spray, at any rate, should be put on just before the hatching out of the first brood begins.

Third spray, six days after the second spray.

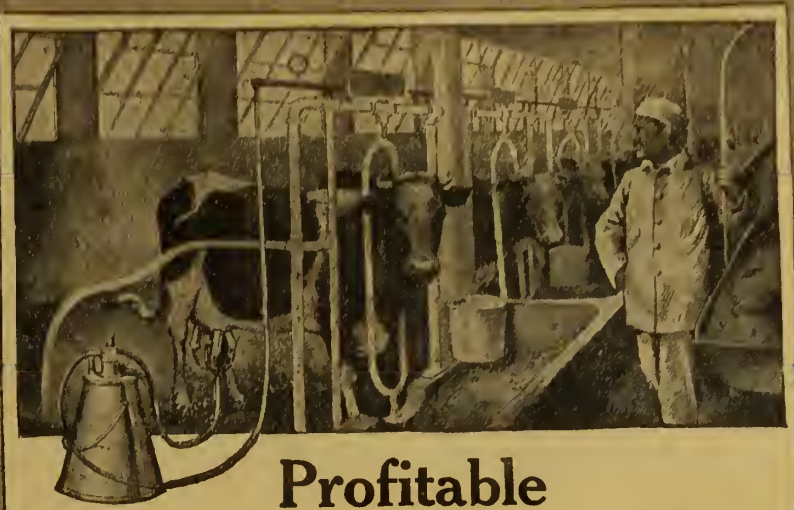
Fourth spray, eight days after the third spray.

Fifth spray, eleven days after the fourth spray.

The second thing to keep in mind is the relative importance of these five sprays. They are all important; but the Calyx spray is without a doubt the most important of the five. Tests made by government experts have demonstrated that more than 50 per cent of the first brood can be killed by means of the poison deposited in the calyxes by the Calyx spray. Because of the importance of this spray, the work should be done very carefully and very systematically. The trees should be sprayed from every conceivable angle, so that not a calyx should fail to receive its due proportion of the poison. This may necessitate the use of 25 per cent more spray material than in any one of the other sprays; but the end, i. e., the killing of 50 per cent of the first brood, will justify the extra labor, extra care, and extra expense.

Sprays two to five inclusive are sprays designed to furnish the fruit, apples and pears, with a covering of poison. The newly hatched worm, in its search for food, imbibes a modicum of this poison and forthwith gives up the ghost. The process of extermination would thus seem to be a very simple process, and it would be if we could keep the surface of the apple or pear covered with the poison; but apples will grow and their surfaces will expand. The consequence is that an apple wholly protected today may be only partially protected tomorrow. Hence the need of repeated sprays to keep the apple as fully protected as possible. Then an apple makes a more rapid growth in its earlier than it does in its later stages. For that reason the interval of time between any two cover sprays may be increased as the apple passes thru its successive stages of development. By applying these principles, in the campaign of extermination, to the four cover sprays (two to five inclusive), we can understand why the interval of time between any two cover sprays increases as we pass from the first cover spray (the second in the series) to the second, from the second to the third, and from the third to the fourth (the fifth and last in the series). By the Calyx spray 50 per cent of the worms can be killed. By means of the four cover sprays put on as indicated, fully 95 per cent of the other 50 per cent can, it is believed, be put out of commission. If so, then the danger from the codling moth for the season would be a negligible factor. The few who escape we can safely hold in check for the rest of the season by the use of bands on the trees.

There are, however, three things which, in conclusion, I desire especially to emphasize. (1) If an orchard has been neglected and is badly infested, it will be necessary to put on, in the prescribed time, more than five sprays. Within that time at least seven or eight sprays should be put on, the intervals between the cover sprays being proportionally arranged; for the more worms there are, the greater the need for keeping the apples covered with the deadly poison. Men later in the season, when they see the actual ravages of the codling moth, realize the danger to which they have exposed their orchards and put on two or more sprays in a frenzied effort to save their crop. What they need to do is to realize, while the first brood is hatching, the danger to which they are then exposing their orchards and to act (spray) accordingly. Better to lock the stable door before than after. (2) A campaign to exterminate the codling moth would, in order to be a success, require the co-operation of all the growers in a given section. One grower by staying out and by spraying in any old haphazard way could undo the work of all his neighbors. (3) Before bringing about the practical extermination of the codling moth, it may, and probably would, be necessary to carry on the campaign as outlined for two or three years. Even so, the cost would not be greater than under the present way of doing things while the improvement in the condition of our orchards would be its own justification.



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THERE'S nothing like experience. Most of the worthwhile lessons learned in life come by experience. Experience, in other words, something actually done and proved, is of more value to Western Farm Life readers than all the theory in the world.

We are just now in the midst of the baby chick season. A word from readers as to their success in care and feeding may be of help to beginners or to those not very successful. We have had splendid success with our first batch, now two weeks old, in spite of some very severe weather. We fed a very little oatmeal the first few days, since then cracked wheat and cracked corn, with a warm mash at noon, the same as that furnished the hens. Of course they get some table scraps, all the milk they can drink and plenty of fresh water. We never had a healthier or more vigorous lot of chicks, always hungry, eternally digging and hunting. We have no objection to commercial chick foods, but find the cheaper feed of our own mixing perfectly satisfactory. So far we have had no greens for the chicks, but furnish some potato parings and apple cores, which they seem to enjoy.

Don't let's get so busy at other work as to neglect the chicks, especially in the matter of cleanliness. Clean floors, clean feed and water dishes, and especially clean bodies (free from lice), are essential to success; clean, dry sand or soil should always be provided, and straw or alfalfa leaves are not so costly that we can afford to be without one or the other.

Of course we expect to get eggs right thru October and November, the bad months. Just the same we are going to "can" some eggs. Every canned egg used in cooking and baking releases a freshly laid egg for the market at 40 or 50 cents a dozen. Your town customers will be glad to buy these canned eggs when you are unable to supply them with fresh ones and you can get twice as much for them then as they will bring now. Better candle all eggs you expect to put up. There may be no doubt of their freshness, but occasionally an egg with a blood clot is found that, if you are going to sell the eggs, will spoil your trade.

"Canning" Eggs

April is a month of great things in poultry affairs. The only month of the year to compare in egg yield with April is March, and but for the fact that many hens are now setting or have baby chicks, April would probably be far in the lead in egg production. Hens should average twenty eggs each this month. May will probably see a falling off, but good care and attention to details, such as providing shade, plenty of greens and milk, and keeping pens and yards clean, will keep the egg yield up to the average of sixteen or eighteen eggs.

Because eggs are so plentiful and so low in price; because in November, December and January eggs will be relatively scarce and high in price, and because eggs are of fine quality in April and will not be of such good quality later, eggs should be preserved now. For home use no method has been discovered better than the water glass method. It is not a difficult task, and with due care there will be no failure.

Water glass is a substance used in glass making. It is made by melting together quartz, sand and soda ash, and looks like thick white syrup. It can be bought at drug stores, feed and poultry supply stores and costs 75 cents to $1 a gallon.

Wooden kegs, candy pails or stone jars are usually used for holding the eggs. Prepare the vessel by cleaning thoroly; boil fourteen quarts of water and while the water is still warm, add one quart of water glass and mix well. Some recipes call for one part of water glass to nine parts of water, but the above recipe of one to fourteen has been found very satisfactory and much cheaper. If the vessel is about half filled with this solution, the eggs may be put in from day to day as they are gathered, and this amount of solution will usually cover the eggs when the vessel is full. There should be sufficient solution to cover the eggs so that none are exposed to the air. Covering the vessel with oiled or greased paper will prevent evaporation. The eggs should be kept in the same way as are canned fruits or vegetables.

"Canned" eggs are not as good as fresh eggs. If care has been exercised in making the solution and if fresh, clean eggs only have been used, they will be found sweet and good, tho a little watery and not as good in flavor as newly laid eggs, but of better quality than the average storage eggs.

Eggs may be placed in the vessel in any position. BOILED water is quite sure to be pure. Only CLEAN, FRESH eggs should be used. ONE part water glass to FOURTEEN parts water.

A one-gallon jar holds about three dozen eggs.

A three-gallon jar holds about nine dozen eggs.

Pure water, clean fresh eggs, clean vessels, stored in a cool, dry place, will mean plenty of good, cheap eggs next winter. Do not be alarmed if the liquid thickens; just be sure the eggs are always well covered. If these eggs are sold, they must be sold as packed eggs. Eggs require no attention after being put away.

Epsom Salts for Hens

How much epsom salts shall be given 25 hens in the drinking water, say once or twice a month, to keep them in good shape? How much green bone is safe to feed, say three times a week? What is good for soft shell eggs? I get several of them at night on the perch. I feed plenty of oyster shell, bone and grit. Would limestone help any and where would I be able to get some?—J. D. C., Colorado.

Feed epsom salts either in the mash or in the drinking water at the rate of one teaspoonful for each three grown fowls.

The general rule for feeding green cut bone is about one ounce per fowl per day. Whether more or less would be better I cannot say.

I have had good results with no hurt when I permitted my hens to have all the fresh meat they could eat, but this was the case only when meat cost practically nothing. At the present prices, one cannot afford an unlimited quantity of fresh meat or bone.

If your hens have oyster shell in sufficient quantity or lime in some other form, I cannot imagine why they should produce soft shelled eggs in any number. Sometimes a hen with some internal disorder will continue to lay eggs without shells, but this trouble is not very general. For three years I have furnished my hens no oyster shell or grit, and last year had but two soft shelled ones and so far this year not one. In most cases where a variety of feed is furnished there is little trouble of such as you mention. Old plaster usually answers the same as oyster shell. I can only suggest that you try to find the hens laying the soft shelled eggs and if they continue to break the rules of the game, get rid of them.

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State of Colorado, County of Denver. Before me, a notary public in and for the state and county aforesaid, personally appeared W. S. Edmiston, who, having been duly sworn according to law, deposes and says that he is the business manager of the Western Farm Life, and that the following is to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor and business manager are:

Name of Publisher—The Farm Life Publishing Co.

Editor—A. T. Steinel, Denver, Colo.

Managing Editor—A. T. Steinel, Denver, Colo.

Business Manager—W. S. Edmiston, Denver, Colo.

2. That the owners are:

W. S. Edmiston, Denver, Colo.

F. P. Johnson, Denver, Colo.

E. M. Ammons, Denver, Colo.

J. F. Reardon, Denver, Colo.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages or other securities, are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustee, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association or corporation has any interest, direct or indirect, in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, thru the mails or otherwise, to paid subscribers during the six months preceding the date shown above is 52,500.

W. S. EDMISTON,
Business Manager.

Sworn to and subscribed before me this 27th day of March, 1917.

EDMONTE O. HAFFNER,
Notary Public.

My commission expires March 14th, 1920.

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HEWITT'S S. C. BUFF LEGHORNS. EGGS, $1.00 per 15, 50 for $3.00, 100 for $5.00. Mrs. Philo Hewitt, Lexington, Neb.

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S. C. W. LEGHORN EGGS FROM 185 AND 200 egg layers. Agricultural College and Tancred stock. Chas. Adamson, Manhattan, Kans.

LAYERS—S. C. W. LEGHORNS, MATED WITH male extra winter egg type. Setting, $2.00. Chick order early guaranteed. Henry Mehl, Lorraine, Kans.

SINGLE COMB WHITE, S. C. BROWN LEGborns, bred-to-lay strains. Eggs $2.00 for 15, $3.00 for 50, $6.00 for 100. Plainview Poultry Farm, Lebo, Kans.

EGG-BRED, BARRON STRAIN, SINGLE COMB White Leghorns. Hatching eggs and baby chicks for sale. Write for catalog. The Rowley Egg-Farms Company, Palisade, Colo.

ROSE COMB BUFF LEGHORNS EXCLUSIVELY. "Frost-proof combs" means winter eggs. The largest Leghorn. Select eggs, 15, $1.50; 100, $5.00. Goldenrod Poultry Farm, Mesa, Colo.

S. C. BROWN LEGHORNS; DAY OLD CHICKS, $10.00 hundred. Setting eggs, $4.00 hundred. Mammoth Pekin duck eggs, $1.00 setting. W. L. White, Altamont, Kan.

FOR EGGS AND LOTS OF 'EM, TRY MY large, tame English White Leghorns; prize-winning and 288-egg strain; 15 eggs $1.50, 100 $7.00, prepaid; guaranteed. Order now or write Mrs. S. A. Hefner, Chickasha, Okla.

EXTRA GOOD SINGLE COMB WHITE LEGhorns—Pure white, low-tailed males mated to heavy laying females. Eggs $5.00 per 100; setting, $1.50. Order now. E. D. Allen, Inland, Neb.

UNIVERSITY PARK POULTRY RANCH—BABY chicks and hatching eggs. To every thinking breeder this wonderful line-bred stock of thoro, heavy-laying Single Comb White Leghorns, which will reproduce themselves; bred to shell out eggs and do it. For sale, hens, pullets and cockerels. Send for circular. Chicks from 241-egg trapnest stock, $18 per 100; chicks from 200-egg Hogannized test, $15 per 100; guaranteed hatching eggs; also setting; special prices in incubator lots, prepaid to your express office in lots of 30 or more; guaranteed live delivery. I also guarantee what I advertise. Visitors welcome. 2520 S. Clayton. Phone South 337. Denver, Colo.

RHODE ISLAND REDS

ROSE-COMB REDS—EGGS FOR HATCHING. F. Gregorius, Humphrey Neb.

ROSE COMB RED CHIX. XRAY INCUBATOR cheap. Lily Robb, Neal, Kan.

ROSE-COMB RHODE ISLAND REDS—100 eggs, $5.00. Redview, Irving, Kan.

ROSE COMB RED CHICKS, 10c. Mrs. Alex Leitch, Parkerville, Kans.

SINGLE COMB REDS, WHITE LEGHORNS and Orpingtons, free list. Glenn Davison, Grand River, Iowa.

PURE BRED R. C. R. EGGS FOR HATCHING, $1.25 per 15; $5.00 per hundred. Mrs. F. A. McGuire, Paradise, Kans.

THOROBRED SINGLE COMB RHODE ISLAND Red eggs, $3.00 and $5.00 per setting. Faith's Reds, 711 Polk, Pueblo, Colo.

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PRIZE STOCK, ROSE COMB REDS. EGGS 75c to $1.25; $5.00 per 100; fertile. A. Stevens, 3239 Race St., Denver.

EGGS FOR HATCHING, ROSE COMB REDS exclusively: prize-winning, heavy laying strain. Write for mating list. E. A. Miller, Alma, Neb.

BIG MISSOURI RHODE ISLAND REDS, ROSE comb, 15 eggs $2.25 from pen No. 1. Special pen 15 for $5.00 prepaid and guaranteed. J. C. Guyer, Mandon, N. Dak.

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FERTILE EGGS, HATCHING FINE; S. C. R. I. Reds, vigor, size, color; 700 winter layers; ben-hatched, farm-raised, $6 per 100; $50 per 1,000. Mrs. J. M. Erwin, Arvada, Colo.

EXHIBITION AND HEAVY LAYING TYPE SINgle Comb Reds. We are the oldest breeders of reliable Reds in the West. 30 eggs, $2.00, or $6.00 per 100. Circular. Lower's Poultry Farm, Arvada, Colo.

FREE—HOW TO MATE AND BREED RHODE Island Reds. Just what you want to know but could not get correct information. Send stamp. Trapnested stock, both combs, big, dark velvety red strain for sale. Ava Poultry Yards, Ava, Mo.

SIX GRAND PENS ROSE COMB REDS, MATED to roosters costing $15.00 to $50.00; 15 eggs, $2.50; 30 eggs, $4.00; 50 eggs, $6.00. Pure bred range flock, $5.00 per 100. Baby chicks. Send for catalog. W. R. Huston, Americus, Kans.

ORPINGTONS

BUFF ORPINGTON EGGS, $5.00 PER 100. Mrs. Alma George, Denton, Neb.

ORPINGTONS, WHITE OR BUFF. LIST FREE. Frank Lewis, Superior, Neb.

PRIZE-WINNING SINGLE COMB BUFF ORPingtons; eggs, $1.25, 15; express prepaid. Carl Scherhacher, Guide Rock, Neb.

BUFF ORPINGTON EXCLUSIVELY. EVEN buff of large type. Eggs, $3.00 and $2.00 setting. John Shaffer, Alma, Neb.

WHITE ORPINGTON EGGS FROM LARGE scored birds. $6.00 per 100, $1.50 setting. Otto Hampp, Beaver Crossing, Neb.

BIG BUFF ORPINGTONS—MOST PROFITABLE eggs on market. Eggs, $1.00 for 15; baby chix, 15c each. Chas. M. Green, Scottsville, Kans.

TO ADVERTISE MY BUFF ORPINGTON EGGS from prize winners, for hatching, $1.60 for 15. Prepaid Colorado. Strieker, 41st and Charles, Omaha, Neb.

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WHITE ORPINGTONS—ALDRICH STRAIN Direct. Eggs, $1.50. Two extra choice pens, $3.00 per 15. Fertility guaranteed. H. M. Goodrich, 712 Topeka avenue, Topeka, Kans.

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WYANDOTTES—WHITE AND COLUMBIAN—Won firsts five states. Eggs. Catalog. Templedotte Farm, Lexington, Neb.

WHITE WYANDOTTE EGGS—FROM FANCY pens (direct from Keeler); $1.00 and $2.00 per setting. H. Relihan, Smith Center, Kans.

WHITE WYANDOTTES—EGGS $2.00 AND $1.00 per 15; $3.00 per 50; $5.00 per 100. Miss Anna Lansdown, Box 291, Ft. Lupton, Colo.

CLARY'S "CHALK WHITE" WYANDOTTES are winners. Egg orders booked now. $2.00 per setting, $8.00 for 100. Geo. Clary, Fairbury, Neb.

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FOR SALE—THOROBRED COLUMBIAN WYANdotte eggs for hatching, $1.00 per 15 or $5.00 per 100. Mrs. Wm. Heitman, Clay Center, Kans. Route No. 3.

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MAMMOTH LIGHT BRAHMAS; EGGS. $1.00 per 15. A. M. Richardson, Altoona, Kans.

PURE-BRED MAMMOTH LIGHT BRAHMAS; 15 eggs, $1.00. Cora Lilly, Olivet, Kans.

EGGS—PURE-BRED LIGHT BRAHMAS; 15, $1.00; 50, $3.00; 100, $5.00. Mrs. Grace Buskirk, Pender, Neb.

MY LIGHT BRAHMAS AGAIN WIN SWEEPstakes in the big 1917 Denver Stock Show. Hatching eggs for sale; prices reasonable. E. Grosser, W. 23rd and Perry, Denver.

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SINGLE COMB COCKERELS, $2.00. Eggs, $1.50 set 15, $5.00 per 100. Quality Ancona Yards, Morganville, Kan.

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QUALITY DARK CORNISH, THE IDEAL FARM fowl. W. W. Officer, Fowler, Colo.

JANDEBEUR'S QUALITY DARK CORNISH—Hatching eggs from prize-winners; eggs, $1.50 up. Baby chicks, 15c up. Write for mating list. R. H. Jandebeur, Alma, Neb.

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BUFF MINORCA EGGS FOR SALE, $1.50, $3.00 and $5.00 per 15. Red River Poultry Farm, Devol, Okla.

S. C. BLACK MINORCAS—PRIZE-WINNERS. 14 prizes won out of 16 birds exhibited at Kansas State Fair. Stock, eggs and baby chix for sale. F. Kremer, Manchester, Okla.

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SICILIAN BUTTERCUPS, THE FOWL FOR farmer, fancier and family. Circular and mating list free. W. Bachmann, 1039 Fillmore st., Denver, Colo.

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PURE BRED BLACK LANGSHAN EGGS—B. S. Kuhn, York, Neb.

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FARM RAISED, PURE BRED WHITE LANGshans; hens, pullets, cockerels, eggs. Mrs. Geo. McLain, Lane, Kan.

GET MY FREE MATING LIST OF CHICAGO and Madison Square prize winning Langshans. John Lovette, Mullinville, Kan.

THOROBRED BLACK LANGSHANS EXCLUsively. Eggs from hens 10, cockerels 15 lb., extra layers. Sixteen eggs, $2.50, 100 $8.50, postpaid. Maggie Burch, Oyer, Mo.

MOTHER'S AND MINE FOR 17 YEARS. WHAT? Quality, farm-range White Langshans. Eggs, $6.00 per 100; $1.25 per 15. Mrs. Jas. Dorsett, Tonkawa, Okla.

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WHITE-FACED BLACK SPANISH, FROM THE best stock to be obtained in this country. Have sold out on stock, but can furnish eggs, $2.00 per setting, $10.00 per 100. W. W. Yale, Chickasha, Okla.

DUCKS

INDIAN RUNNER DUCK EGGS—$1.00 PER SETting. Mrs. Baker, Arvada, Colo., R. 1.

FAWN-WHITE RUNNERS; 13, 75 CENTS; 100, $4.00. Mrs. Jno. Whitelaw, Lawrence, Kans.

RUNNER DUCKS AND POLISH EGGS, $1.00 setting. Undefeated; best. Ora Dubbs, Douglas, Kan.

BABY CHIX

REDS, ROCKS, LEGHORNS, 12½c. REQUEST folder. McClune Hatchery, Ottawa, Kan.

BABY CHICKS—ROCKS, REDS, WYANdottes, Leghorns, Orpingtons, 12½ cents. Jesse Younkin, Wakefield, Kans.

50,000 PURE-BRED BABY CHICKS TO SELL, 10 cents each. Wanted, good, pure-bred eggs, premium above market price. Colwell Hatchery, Smith Center, Kans.

RESERVE BABY CHICKS NOW; FROM sturdy, farm-reared Rocks, Reds, Orpingtons, Wyandottes, Leghorns; safe delivery by hundreds or thousands, guaranteed. Red Hen Poultry Farm, Hastings, Neb.

DAY OLD CHIX AT REDUCED PRICES. DEliver to your express office, all charges paid, guaranteed alive. Large strain S. C. White and Brown Leghorns, $12 per 100. Barred Rocks, R. C. Reds, Buff Orpingtons and S. C. Reds, $14 per 100. Leftovers above breeds, $10 per 100. Hatched in the right climate and in the right way to live when you get them. Edward Steinhoff, Leon, Kan.

SEVERAL VARIETIES

DUCK EGGS, 75C PER DOZEN. GEESE EGGS, 25c each. Postpaid. Lawrence Mantey, Carr, Colo.

EGGS, $1.50 PER SETTING. LEGHORNS, Reds, Rocks, Wyandottes, Orpingtons. Royal Poultry Yards, Colleyville, Kan.

FOR SALE—CHICKS AND EGGS FROM S. C. W. Leghorns and Rhode Island Reds. J. O. Bartholomew, Rocky Ford, Colo.

BARRED ROCKS, TOULOUSE GEESE AND White Indian Runner Ducks. Collie pups. Mrs. Frank Davis, Holbrook, Neb.

SINGLE COMB REDS AND BUFF LEGHORNS. Eggs for winter layers by the 100. Elmer Carson, 34th and California, Omaha, Neb.

BUFF PLYMOUTH ROCK, ROSE AND S. C. Brown Leghorns; White Pekin duck eggs for hatching. Mrs. J. D. Brown, Ft. Morgan, Colo.

EGGS FOR HATCHING—MATING LIST FREE. S. C. Buff Orpingtons, Toulouse Geese, Indian Runner Ducks. Peter Brehm, Harvard, Neb.

ALL VARIETIES LAND AND WATER FOWL, imported stock. Winners of thousands of prizes. List free. Rose Lawn Poultry Farm, Beaver Crossing, Neb.

EGGS — ALL STANDARD VARIETIES. Healthy farm flocks of good quality, color, size. Prices right. We stand by our name. Square Deal Poultry Association, Mrs. Fern Ogilvie, Sec'y, Beaver Crossing, Neb.

BOURBON RED TURKEYS—WORLD'S BEST strain. Great big, vigorous, farm-raised, deep-breasted birds. Also white egg Indian Runner ducks, all from prize-winning stock. Eleonora Poultry Ranch, Brighton, Colo.

EGGS—WORLD RENOWNED "RINGLETS." New York prize winners past 20 years. Pens No. 1 both matings, $3.00 and $4.00; 15, $2.00; 50, $3.00; 100, $5.00. Pheasant, $4.00 dozen. Cockerels, $2.50 Harper Lake Poultry Farm, Jamestown, Kan.

COLUMBIA HATCHERY—ALL LEADING VArieties of baby chicks, cockerels and hatching eggs. Reds, Rocks, Leghorns, Orpingtons, etc. Live delivery of baby chix guaranteed to your express office. We ship to all parts of Colorado, Wyoming, New Mexico. Write for price list. P. O. Box 1102, Denver.

EGGS, EGGS—FROM THOROBRED TURKEYS, geese, 8 kinds of ducks, Pearl and White Guineas, Barred, White and Buff Rocks, Houdans, Rhode Island Reds, Hamburgs, Games, White and Silver Laced Wyandottes, Leghorns, Langshans, Light Brahmas, Minoreas, Cochins, Buff and White Orpingtons, Bantams, also Hares, Rabbits, Guinea Pigs and Fancy Pigeons. D. L. Bruen, Platte Center, Neb. Write wants.

INCUBATORS

IT'S GOOD BIG HATCHES YOU WANT THIS year. Denver incubators are built and tested for this dry climate and positively do the work. Get our free catalog. Low prices, with freight prepaid. Coal heated colony brooders. Baby chicks and eggs for hatching from purebreds. Denver Incubator Co., 177 S. Broadway, Denver, Colo.

PET STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

YOU CAN MAKE A GOOD LIVING IN YOUR back yard raising rabbits for us. We will pay you from $1.00 to $2.00 each for youngsters. Breeders furnished at reasonable prices. Send dime for contracts and circulars. Thorson Rabbit Company, Aurora, Colo.

IF YOU DON'T FIND ADVERTISED HERE what you want, write our classified advertising department and they will be glad to place you in correspondence with the right parties.

LIVE STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

CATTLE

MILKING SHORTHORNS AND JERSEYS FOR sale. W. A. Wight, Las Animas, Colo.

FOR SALE—DOUBLE STANDARD POLLED and Horned Hereford bulls. Wallace Libbey, Maxwell, N. M.

FOR SALE—ONE REGISTERED 15-MONTHS-old Holstein bull and high-grade Holstein calves. Apply to Union College Farmer, Chas. A. Williams, College View, Neb.

WE CAN SELL 15 YEARLING BULLS AND about 30 bull calves, all registered, and of the best breeding and individuality. Among the yearlings are three herd headers, also one 4-year-old bull by Simoon. All at popular prices in order to sell. J. O. D. Ranch, Aroya, Colo.

REGISTERED JERSEYS AND MILKING SHORThorns. Jersey herd headed by Maggie's Shy Duke, 140084, Grand Champion Denver Stock Show. Two nearest dams average 54 lbs. milk per day. Shorthorns headed by Independence Lee 427351. Two grandams average 9023 lbs. milk in one year. The Hinman Silo Co., 1650 Champa st., Denver.

HOGS

REGISTERED, BIG TYPE DUROC JERSEY hogs for sale. Edgemoor Farm, Littleton, Colo. Caldwell Martin, Owner.

REGISTERED DUROC JERSEY BOARS AND gilts, sell at $15 and up according to age and quality. We are sold out on bred gilts, but can contract for gilts to be bred for later farrowing. Our sales at the Denver yards speak for the quality. J.O.D. Ranch, Aroya, Colo.

WOULD LIKE PRICE ON TWELVE HEREFORD cows, or heifers and bull, all registered. R. H. Woods, Red Rock, N. M.

HORSES

REGISTERED PERCHERON AND STANDARD bred mares for sale. E. C. Mason, Boulder, Colo.

FOR SALE—IMPORTED ROAN 8-YEAR BELgian stallion, 2,100. One 3-year bay Belgian, 2 roan yearlings. As good as you will find anywhere. Purinton Bros., Wilcox, Neb.

NOBLE REX, 5-YEAR-OLD REGISTERED SADdle-bred stallion, 16 hands, black, 1,200 lbs. Grand individual, goes all five gaits; winner of stallion class at 1917 Denver Stock Show. By a son of the immortal Rex McDonald. Price, $750. Can be seen at Denver Cab and Omnibus Co. Stables, Denver, until April 1. After that at J.O.D. Ranch, Aroya, Colo.

JACKS AND MULES

KIT CARSON, A BIG-BONED 7-YEAR-OLD jack, winner at Denver show, $500. Also a great yearling jack, promises to be bigger and better than his sire, and out of a jennet whe took first at Denver also; price, $250. We have some excellent mules for sale; all ages and sizes. J.O.D. Ranch, Aroya, Colo.

FARMS AND RANCHES

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WANTED—TO HEAR FROM OWNER OF GOOD farm for sale. Northwestern Business Agency, Minneapolis, Minn.

WANTED—TO HEAR FROM OWNER OF FARM or unimproved land for sale. O. K. Hawley, Baldwin, Wis.

WANTED—HEAR FROM OWNER GOOD FARM for sale. Cash price; description. D. F. Bush, Minneapolis, Minn.

WANTED—TO HEAR FROM OWNER OF GOOD ranch for sale. State cash price and description. D. F. Bush, Minneapolis, Minn.

STOCK RANCH, $1,900; IMPROVED; 200 acres; deep soil; timber; high schools; dry farming or irrigation. E. Hopkins, Nucla, Montrose county, Colo.

I HAVE SOME CASH BUYERS FOR SALABLE farms. Will deal with owners only. Give full description, location and cash price. James P. White, New Franklin, Mo.

BUYERS, SEE THESE BARGAINS BEFORE YOU buy. Farms, businesses any kind, anywhere. Send for free magazine. Western Sales Agency, Minneapolis, Minn.

IMPROVED RAINBELT RANCHES, $10 TO $35 per acre; less for unimproved; any size tract. See us before buying. Jahnke & Konkel, 1410 Stout St., Denver.

WANTED—GOOD FARMERS TO LEASE WELL equipped irrigated farms at Rock River, Wyo. Well constructed and sufficient irrigation system. Liberal terms to capable and industrious farmers. Apply H. W. Brettell, Rock River, Wyo.

400 ACRES NON-IRRIGATED LAND, SHALlow to water, dark loam soil, lays practically level with south slope; good fence; near school; good farms surround same. Price, $15.00 acre. Terms. 22 miles of Denver, 7 miles good town. A. J. Simonson, 214 Cooper Bldg., Denver.

LAND—I HAVE PLACED OVER 400 FAMILIES in Weld county, mostly on homesteads and relinquishments. I know nothing desirable left open to entry, but can still furnish partly improved relinquishments or deeded lands at very low price. Call for list. Every statement guaranteed. Land shown by auto from Denver. Mackley, 1643 Champa, Denver, Colo.

OREGON AND CALIFORNIA RAILROAD CO. Grant Lands. Title to same revested in United States by Act of Congress dated June 9, 1916. Two million three hundred thousand acres to be opened for settlement and sale. Power site, timber and agricultural lands, containing some of the best land left in the United States. Now is the opportune time. Large sectional map showing lands and description of soil, climate, rainfall, elevations, etc., postpaid for one dollar. Grant Lands Loosting Co., Box 610, Portland, Ore.

I HAVE 160 ACRES OF AS GOOD LAND AND as good a water right as there is in the West. Sixty acres under ditch and in cultivation. Good house, well and other improvements. The entire 160 acres is all good level land. It is located adjacent to forest reserve and is an ideal place to farm and run a nice bunch of cattle. I am so situated that it is necessary for me to make a quick sale. I will sell for $6.00 an acre payment down; 10 years' time on the balance, or will consider part payment in trade with no money down. I want to turn this land and all you need to do is to show me you meal business. Write me if interested for further details and how you would prefer to make payments. Sidney E. Bartlett, 1402 Arapahoe St. Denver, Colo.

GOVERNMENT LANDS

GOVERNMENT, STATE LAND—BARGAINS. Booklet free. Joseph Clark, Sacramento, Cal.

SEEDS

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BROOM CORN—EARLY DWARF, $2.50 PER bushel. L. Sanders, Atlanta, Kan.

1916 RECLEANED ALFALFA SEED, $8.00 PER bushel. Chas Kelly Kinsley, Kan

WHITE BLOSSOM SWEET CLOVER, REASonable. John Lewis, Hamilton, Kans.

CHOICE ALFALFA SEED $7.50 PER BU.; BAGS furnished. Frank Lanier, Belle Plaine, Kan.

HIGH ALTITUDE SEED PINTO BEANS, $10.00 per cwt. L. M. Hunt Grain Co., Colorado Springs, Colo.

ALFALFA SEED FROM GROWER, $7.80 PER bushel. Sacks extra. G. J. C. Felzien, St. Francis, Kan.

SWADLEY SEED CORN, $4.00 PER HUNDRED. Raised on Swadley place. George Kimbrough, Arvada, Colo.

BLACK HILLS NON-IRRIGATED ALFALFA seed, 20c per pound. N. A. Jensen, Farmingdale, S. D.

FOR SALE—KAFFIR CANE, ALFALFA, CORN. Samples and prices submitted. All 1916 seed. A. M. Brandt, Severy, Kans.

I HAVE COLORADO YELLOW DENT SEED corn of good quality for sale. Price $4.00 per hundred. Ben Pugh, Bashor, Colo.

ALFALFA SEED FROM NORTHWEST KANSAS, 95 per cent pure, good germination, $5.50 per bushel. Geo. Bowman, Logan, Kan.

ALFALFA SEED AT VERY REASONABLE prices. I am selling lots of it in Colorado now. Free sample. "Alfalfa John" Franklin, Beaver City, Neb.

SEED PEAS—SAN LUIS VALLEY SEED PEAS. Prices and samples gladly submitted. Local and carload shippers. A. A. Salazar & Son, San Luis, Colo.

WE HAVE FOR SALE COLORADO YELLOW Dent Seed Corn at 5c a pound. This corn is dry land grown, produced 34 bushels per acre. Lesh Bros., Nunn, Colo.

WHITE AUSTRALIAN SEED CORN, EXCELlent quality, grown on dry land near Denver. In lots of 100 pounds or more, 4c pound. D. W. Jackson, 1360 St. Paul, Denver.

ATTENTION FARMERS—BUY YOUR GRIMM alfalfa seed, Holgrimson and Lyman strains, direct from grower. Will furnish affidavits showing its history. Purity test, 99.39 per cent. Price 42c. Triangle Ranch, Cottonwood, S. D.

IF YOU DON'T FIND ADVERTISED HERE what you want, write our classified advertising department and they will be glad to place you in correspondence with the right parties.

IMPROVED BROWN COUNTY YELLOW DENT Seed Corn; 98 per cent germination. One of the very best varieties for northern sections. Shelled and graded, $2.50 per bushel. J. L. Olsen, Hartley, S. D.

GENUINE GRIMM ALFALFA SEED. CERtificate of purity furnished purchasers; 150 pound lots at prices seedsmen pay. Write for sample and special prices to close out. J. L. Olsen, Hartley, S. D.

BROME GRASS SEED, $8.00 PER HUNDRED, recleaned, free from quack. Brown County Yellow Dent seed corn, germination 95 per cent. The very earliest Dent corn in the Northwest, $4.00 per bushel. Wm. W. Moore. Shields, N. D.

LUMBER

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LUMBER, MILLWORK, FENCE POSTS, WHOLEsale mill prices. Send carpenter's list for freight prepaid estimate. Keystone Lumber Company, Tacoma, Wash.

LUMBER—POSTS AT LOWEST PRICES. GET our delivered prices. Send lumber list for estimate. Pay after unloading. Kirk Company, Tacoma, Wash.

IF YOU DON'T FIND ADVERTISED HERE what you want, write our classified advertising department and they will be glad to place you in correspondence with the right parties.

HELP WANTED

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

THOUSANDS GOVERNMENT JOBS OPEN TO men-women. $75.00 month. Steady work. Short hours. Common education sufficient. Write immediately for free list of positions now obtainable. Franklin Institute, B-177, Rochester, N. Y.

WANTED—IMMEDIATELY, 500 MEN, 20-40, for railway motormen and conductors; all parts United States; $60-$100 month. Experience unnecessary. Send stamp for application blank. National Railway, Dept. 188, Kansas City, Mo.

NURSERY STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

TREES—20 MAMMOTH IMPROVED ELBERTA at $1.00. Order at once. Money back if not satisfied. Everbearing strawberries, $2.00 per 100. Sunflower Nursery, Lawrence, Kan.

IF YOU DON'T FIND ADVERTISED HERE what you want, write our classified advertising department and they will be glad to place you in correspondence with the right parties.

SWEET POTATO SLIPS, ALL VARIETIES, delivered postpaid; guaranteed to arrive in good condition; 100, 35c; 500, $1.50; 1,000, $2.75. Order now—be sure of slips when you want them. Ozark Nursery, Tahlequah, Okla.

Live Items About Livestock

All kinds of livestock have been bringing record prices for some weeks and the indications are that prices will continue strong for some time to come. The supply of feeds is rapidly diminishing and values are correspondingly increasing; farmers cannot afford to feed $1.17 corn and $20 hay unless they get high prices for their meat and on account of the scarcity of livestock the farmers will doubtless continue to realize good round prices.

Prices offered for horses have advanced over those paid during the winter months. There are two reasons for this advance, first the big export demand by the entente and second the demand on the part of farmers for horses for spring work. Good drafters are selling at $200 up, while good chunks are bringing $150 up.

New high record prices were reported for March in steers, which sold in Kansas City up to $12.15 and up to $12.35 in Chicago; western beet pulp-fed steers brot up to $11.75. The reaction in the hog market was but temporary and on the 29th of March the record price on the Denver market was reached when two bunches of pure bred well finished hogs sold at $15. One lot of these hogs averaged 287 lbs. and brot $43 apiece. The record price for lambs was reached the last week in March, when $14.75 was paid for some choice ones on the local market.

The Draft Horse Future

Good draft horses have never before been so scarce in the history of the country. On draft horses weighing 1,600 pounds or more, in good condition, prices have advanced $50 within the last two months. This character of a drafter, well broke and possessing good conformation, is bringing $225 to $300 and hard to secure at those prices. In the opinion of dealers this class of horse will find a good market right along, regardless of how long the war may continue. In fact, when peace is finally restored, it is the consensus of opinion that the demand will be for a better draft horse than is now being used by the belligerent nations.

At present, a large number of medium-sized horses are being bought up for war purposes. This class will be entirely removed from the country and their place largely filled by small motor trucks and automobiles. The future demand will be for a heavier, better breed and farmers who begin breeding for this class will have no cause to regret their action.

The horses in Europe will be pretty well cleaned out before the war is over and that country will necessarily have to look to the United States for its supply. Already in France and Belgium dairy cattle are doing farm work. A draft horse in England and Belgium is worth from $500 to $700 and these prices can largely be realized by American farmers if they will breed the kind European nations demand.

Co-operative Livestock Breeding

This method has been a demonstrated success for many years and is regarded as the cornerstone of successful stock breeding. Community or specialized breeding is responsible for the high-class animals in different European countries. There is scarcely a country in Europe that is not famed for its good livestock, that is not a specialized section.

The community breeding plan is comparatively new in the West, but is fast becoming popular. It is of special benefit to the community as well as to the individuals composing the association.

In unorganized livestock communities, one frequently finds many different breeds; in fact, it is not an infrequent case to find different breeds of hogs, cattle and horses on the same farm. Under such conditions it would be difficult for a buyer to make up a uniform car of one breed of livestock. The community is not known for producing anything special in livestock, consequently buyers wanting a car of something good in that line do not go near that section.

On the other hand, a community that is organized in a livestock breeders' association, specializes in one breed, is constantly raising their standard and is soon advertised as a community that possesses the best in their particular breed.

A breeding association can afford to pay better prices and consequently secure better sires than can an individual breeder, and by the joint use of sires it is possible to keep the more prepotent a number of years.

The common method of organizing a co-operative cattle breeding association is to get a sufficient number of breeders and farmers together so that the association will hold at least 150 head of breeding cattle. The association is then divided into three parts, each part having about the same number of cattle. The members of the association then agree on the one breed of cattle that they shall handle, then send a committee of their members, or preferably a good livestock judge, out to purchase three good registered sires, as nearly alike as it is possible to get them. One of these sires is then placed in each group and assigned to a member, who is paid to care for him by the rest of the association. At the end of two years, the groups exchange sires, and at the end of four years they exchange again. When all three groups have had the use of each sire for two years, they are sold and new ones purchased and the system continued.

Good Gains on Little Corn

At the recent Feeders' and Breeders' Fat Stock Show held at Fort Worth, Tex., March 12 to 17, 1917, the champion pen of five, over all breeds, was Duroc-Jersey barrows.

These hogs were bred by the Texas Experiment Station and fed and exhibited by the Texas Agricultural and Mechanical College. They were used from May 15 to October 6, 1916, in forage crop experiments, grazing on Sudan grass, cowpeas and sorghum forage. On October 6 they were transferred to the animal husbandry department of the A. and M. College; while in the employ of the college they were used for class practice in all the stock judging practice; they aided greatly in helping to fix both market and Duroc-Jersey types in the minds of the stock-judging teams that represented the college at Chicago, Oklahoma and Texas fat stock shows.

These hogs averaged 408 pounds each in weight when they were shipped from the college, and averaged 365 days of age. They sold at the record price of $16.10 per hundred, or $328.44 for the five hogs.

They were fed all they would clean up of the following feed mixture twice each day: Milo chops, 600; wheat shorts, 300; corn, 90, and tankage, 30.

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Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

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FREE FOR SIX MONTHS—MY SPECIAL OFfer to introduce my magazine, "Investing for Profit." It is worth $10 a copy to anyone who has not acquired sufficient money to provide necessities and comforts for self and loved ones. It shows how to become richer quickly and honestly. Investing for Profit is the only progressive financial journal and has the largest circulation in America. It shows how $100 grows to $2,200; write now and I'll send it six months free. H. L. Barber, 449-20 Jackson Blvd., Chicago.

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Took more first premiums at Denver Stock Show with four under 6 mos. pigs than any competitor, on full herds. The reason is plain. Fall pigs sired by Illustrators Chief, the sire of champions in first litter.

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22 Maple St. Colorado Springs, Colo.

JACK MEN, LISTEN

I have the largest 6-year-old jack west of the Missouri River for sale. Other bargains in Mammoth jacks and jennets.

Inspection Invited Satisfaction Guaranteed

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This Grade Guernsey Cow

Her milk production for the year was 16286.1 lbs.

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THE AMERICAN GUERNSEY CATTLE CLUB

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We write a blanket policy and also a special policy on registered stock.

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The Colorado Grange has held aloof from politics and, as a result, has been ignored except in instances where politicians and lobbyists wanted to use it to conserve their selfish ends. Legislation has been enacted for the benefit of the big interests and the farmer has had to be content with the crumbs that fell from their table.

It would be well for the various subordinate Granges to begin now to discuss remedial laws in which the farmer is interested; the matters then could be discussed at the annual Grange meeting and suitable resolutions passed demanding action by the legislature on measures decided on by the Grange, and the legislative committee given instructions to carry out the wishes of the Grange. The subordinate Granges should decide on some of its members as candidates for the legislature and the various state offices, and, regardless of party, go down the line and see that capable Grange men are elected.

Thru co-operation the National Grange has secured much beneficial legislation from Congress and the State Grange can secure similar results from the state legislature if it will go after it in a systematic way.

Another important feature is the giving of our support to our legislative members during the session of the legislature. If our legislative members could receive several thousand letters from the Colorado Grangers in regard to bills in which the Grange is interested, our members in the legislature would be in a position to make a much more forceful argument in favor of the desired measures. The failure to have passed in the last legislature bills in which the Grange was interested can be attributed to the lack of interest and support of the Grange.—H. S. G.

GRANGE NOTES

Banner Grange No. 210 is planning on an entertainment for the Divide Pomona, which will meet in Kiowa, April 14.

Kilkare Grange No. 308, had twenty-two charter members and now has 52. Literary programs have entertained the patrons. An exchange program is being arranged. State Master John Morris visited them the past month.

Pleasant Valley Grange No. 191 had ten new members at their last meeting and a number of applications have been made.

Olathe Grange No. 243 had an open meeting with Prof. H. Fauber of the Montrose County High School to address them. His subject was "Boys' and Girls' Clubs."

Spring Creek Grange No. 202 has had unusually good attendance; they conferred the degrees on six candidates at a recent meeting. They are having from one to four applications every night.

The officers visited the Riverside Grange and put on the third and fourth degrees.

Mountain View No. 150, in February had two patriotic programs and an address on "The Life of Washington," by Judge H. I. Garbutt of Fort Collins. An orchestra has been organized which helps very much in giving the patrons an enjoyable evening.

Colona Grange No. 259 has had a very good attendance. Interesting topics are discussed and debated. They have exchanged programs with Riverside Grange a number of times.

Enterprise Grange No. 25 has had ten candidates to initiate. A three-act comedy entitled "Blundering Billy," was given in February. A large crowd was in attendance. They exchanged programs with Loch Lomond Grange. The Grange is very much alive and has a bright future.

Riverdale Grange No. 187 initiated five candidates. A degree team has been organized. The Grange is in good condition.

Fairview Grange No. 297 has had very good attendance and have been having literary programs and a fine lunch served afterwards. This Grange was just organized last summer and now has a membership of 100. They are going to try to organize a farm loan association.

Valley View Grange of Watenburg, which organized last month, is very enthusiastic and fifteen new candidates are to be initiated at the next meeting.

Four Coming 2-year-old Registered Percheron Stallions, My Own Growing, Weight 6,320 pounds.

My herds have extreme heavy weight and extreme heavy bone.
116 head for sale. All registered.

Yearling Stallions and Yearling Mares
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All pasture broke and priced so you can afford to turn them out. Terms, if it will accommodate you.

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High-class Jerseys. Count Majesty and Majesty Oxford combination herd bulls. Both are great dairy bulls. Have a great August calf by Count Majesty ready for sale. He is fine. Have an imported in dam calf by a son of "Oxford You'll Do" that is a regular "peacock." Also Duroc hogs of best breeding. All stock registered.
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Holstein, Jersey and Guernsey
Bred by the Agricultural College. Most of the dams in the advanced registry
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Home of the Giants
100 Jacks and Jennets. We handle the big kind. Special attention to bone, foot and weight. All ages. Prices from $300 up. All registered, all guaranteed, as represented.
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One 2-year-old registered Jack and two yearling Jacks; all big, heavy boned. One 2-year-old registered Percheron stallion, One Belgian stallion, grade. One standard-bred stallion. Colorado raised and acclimated.
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127-inch Wheelbase

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Which Make Mitchell Cars Distinct

Here are some facts which you should prove before you buy a fine car. Surely nothing else in Motordom is any more important.

John W. Bate has for 30 years been a famous efficiency expert. He has given 14 years to the Mitchell car.

This factory is his creation, designed for this single type. Our present cars were evolved by him, through hundreds of studied changes.

He spent one year in Europe, to combine in Mitchells all the best of European standards.

So the latest Mitchells, in every detail, typify the ultimate efficiency.

These Two Objects

Mr. Bate's first object was factory efficiency. To build a great car, in the finest way, at the lowest factory cost.

He spent millions of dollars to that end. This whole mammoth plant was built and equipped for the purpose. Nearly every part—including our bodies—is built under Bate methods here. And those methods save us, on this year's output, at least $4,000,000.

Next he applied efficiency to the car. He made over 700 improvements. He aimed to make the Mitchell the finest of fine cars. And to make it a lifetime car.

31 Extra Features

His factory savings pay for extras, which most like cars omit. There are 31 distinct features—all costly features—which are rarely found in cars. Things like a power tire pump, a dashboard engine primer, a ball-bearing steering gear, a light in the tonneau, a locked compartment, etc.

100% Over-Strength

In the past three years, part by part, he has doubled our margins of safety. Now all important parts are twice as strong as needed. That is proved by tests.

Over 440 parts are built of toughened steel. All safety parts are oversize. All major strains are met with Chrome-Vanadium.

Gears are tested for 50,000 pounds per tooth. Bate cantilever springs—used for two years—never yet have broken. Not a single one.

24% Added Luxury

Our new body plant this year gives another big saving. That enables us to add 24 per cent to the cost of finish, upholstery and trimming. This makes the Mitchell the luxury car of its class. And all our bodies are exclusive, built and designed by our experts.

Go See the Results

Go see these extras—extra features, extra beauty, extra strength. Under other methods, such things are impossible at Mitchell prices.

See also Mitchell Junior, which is nearly like the Mitchell, but a little smaller size. You will agree that no such values are elsewhere shown in fine cars.

Do this now. In May and June we are always oversold.

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Mitchell—a roomy, 7-passenger Six, with 127-inch wheelbase and a highly developed 48-horsepower motor.

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Mitchell Junior—a 5-passenger Six on similar lines, with 120-inch wheelbase and a 40-horsepower motor—¼-inch smaller bore.

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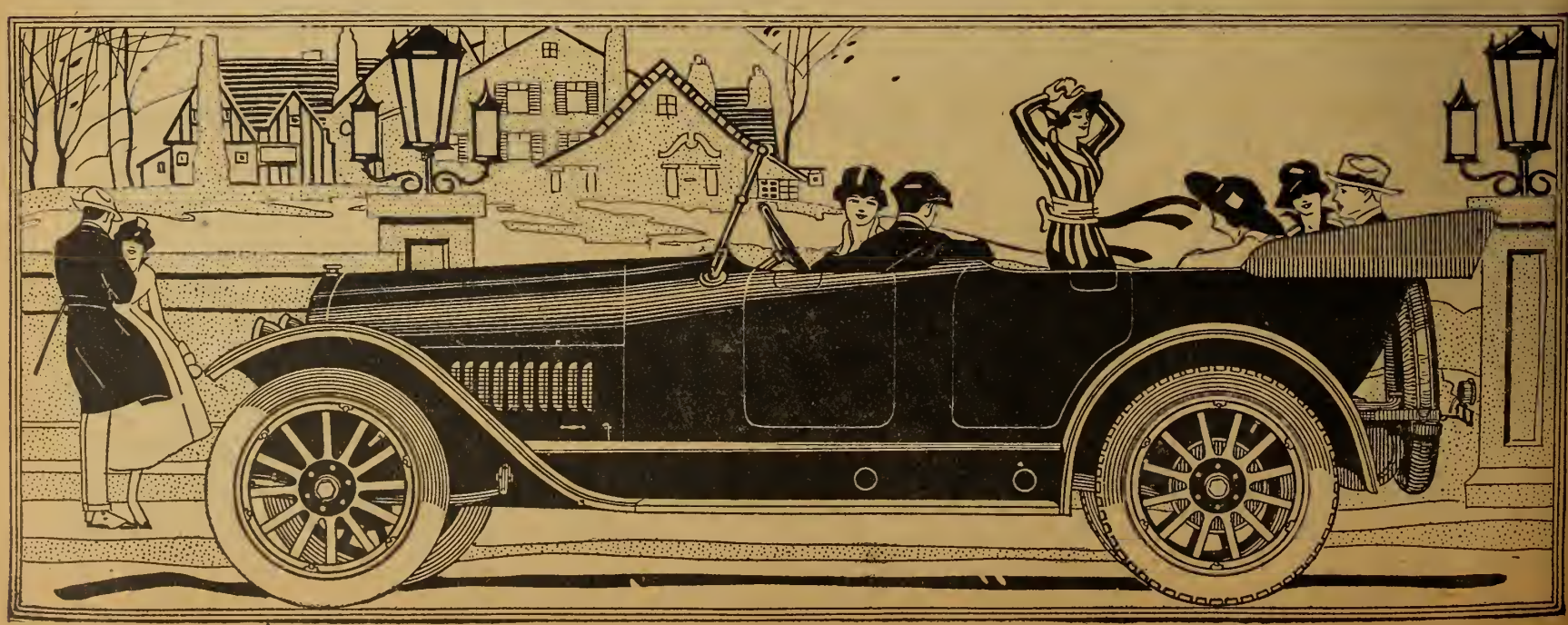

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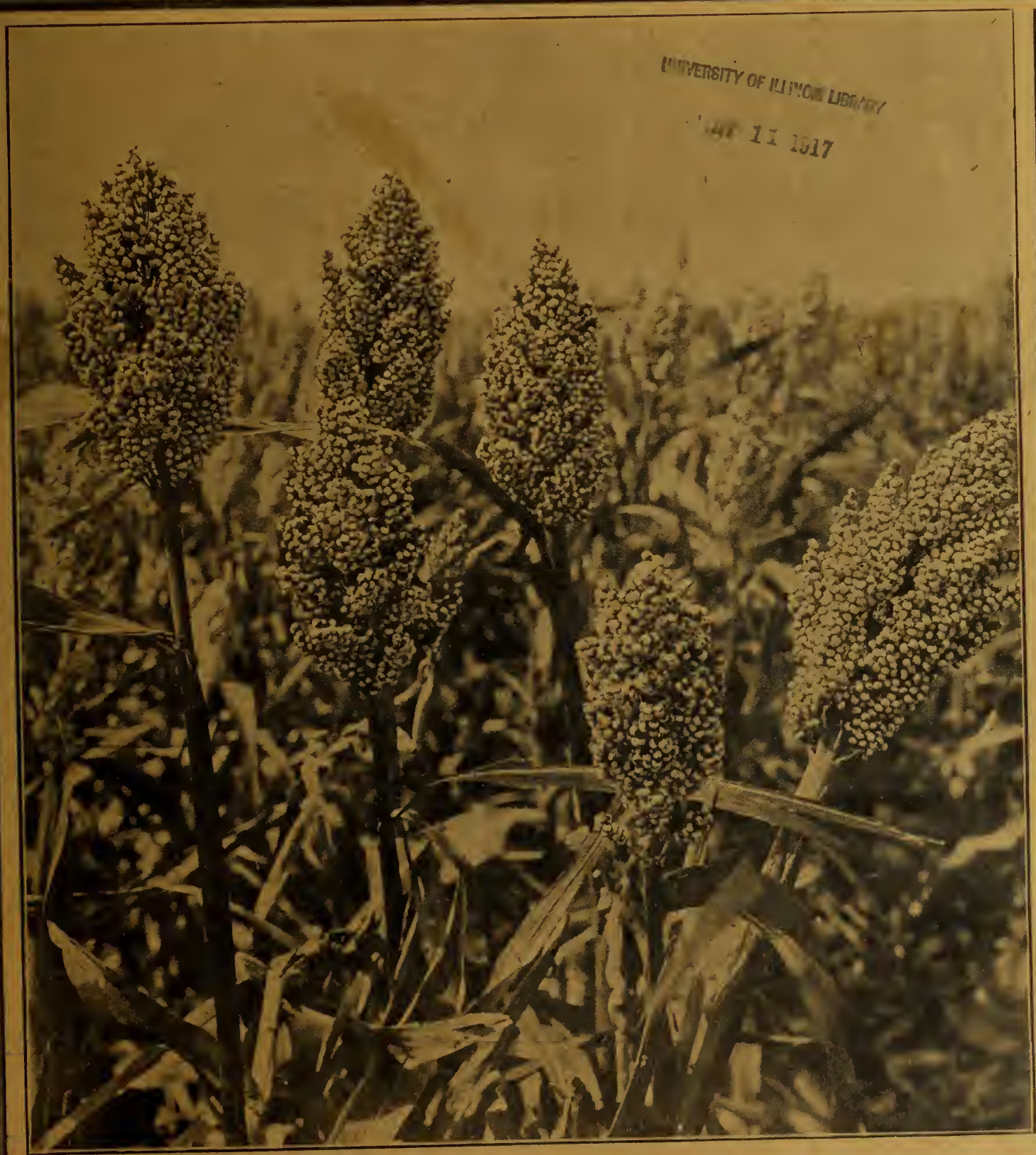

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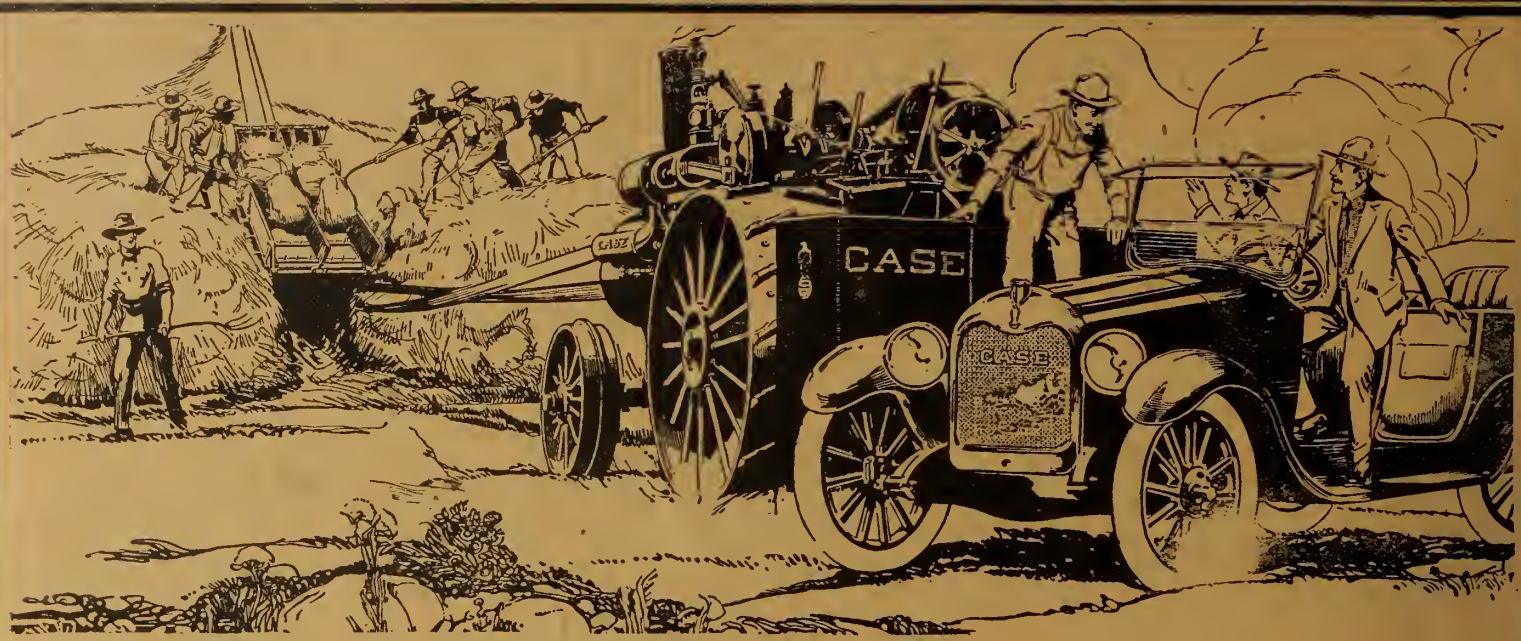

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Year by year Case has set the pace in improvements. Case steam engines have no equal for pulling capacity, ease of operation and all-'round efficiency. They meet the boiler laws of all states and Canadian provinces.

Thousands of farmers all over the world prefer Case engines to all others. These users are our best salesmen. The reputation of Case engines has passed from farm to farm and from generation to generation until today Case steam engines are the standard by which all others are judged.

They come in nine sizes—18, 30, 40, 50, 60, 65, 75, 80 and 110 h. p., a size for every farm or need.

Write today for our complete Case catalog. It is an album of information that no farmer should be without. It is most beautifully printed, with many interesting scenes and reproductions in colors. It costs you merely the price of a postal card. *Write today for this free catalog.*

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Nowadays it is generally known that **Case steel threshers** are superior. Most farmers want their crop threshed with Case machinery. Many predict the complete dominance of Case threshers. This great demand is the result of only one thing—Case threshers are the *right* threshers. Case principles of construction and Case performance have never been equaled.

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1. Case threshers get all the grain there is in the crop, and—deliver it *clean* in the sack.
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These superiorities have given Case threshers the lead they hold today. Study them carefully before you buy. Write for our catalog giving detailed information.

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Case Baling Presses are built in two sizes—14x18 inches and 17x22 inches. They are constructed of the best materials and are unexcelled in workmanship.

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WESTERN FARM LIFE

A Western Magazine for Western Farmers and Stockmen

Comprising Ranch and Range, Farmers Life and Fruit Journal, Trans-Mo. Farmer and Ranchman

Largest Circulation of Any Farm Magazine in the West

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BOWMAN'S SANITARY DAIRY, TRINIDAD, COLO., BUILT UP FROM ONE COW BOUGHT WITH EGG MONEY

How One Hen Started a $50,000 Model Dairy

CHAPTER FROM THE LIFE OF A COUPLE OF COW LOVERS

ALVIN T. STEINEL

MEN of science may scoff and shrug their shoulders at what is about to be related, but improbable as it may seem it is the truth. There is a model dairy farm in Southern Colorado now numbering nearly a hundred producing cows that had as its foundation stock one hen! No, this hen was not a freak of nature; just an ordinary laying hen, but she laid—and laid is used advisedly in this connection—the foundation for Bowman's Sanitary Dairy, which from such an humble and unusual start is, after twenty years of effort, a $50,000 business.

The useful hen, serving as heroine for this tale, was bestowed upon Mrs. Bowman by her mother. The hen was a good layer, but she wouldn't stay in her own yard. She kept up that habit, out of pure lonesomeness, after she was adopted by Mrs. Bowman, but she would always come home to lay. In due time she was placed on a setting of eggs and she hatched out a fine brood of chix. Mrs. Bowman had been raised on a Kentucky farm and she just naturally loved the cows and chickens, so Mrs. Hen and her brood got good care and feed and every chick grew up into a useful producer—that is all except the surplus cockerels—and they got the ax.

At this time Mr. Bowman was a traveling salesman, with a route thru the coal camps around Trinidad. Mrs. Bowman occasionally made trips with him, hens permitting. On one of these trips a friend of the family who had lost his wife offered to sell the Bowmans his cow. He said she was a fine milker, and he wanted to get a good home for her. He knew Mrs. Bowman would like the cow, and while he could get more for her from strangers, he wanted that cow to have good treatment, consequently he would not listen to outside offers, but would let the Bowmans have her for $35.

This Cow Was Different.

Now, we've all heard that sort of a cow story. Usually it turns out that the "heavy milker" is a fair and fat sort of a beef animal with partial paralysis of the udder. But this cow was different. The owner told the truth about her and she turned out to possess good capacity and a willingness to serve under kind treatment.

"But where do we get the $35?" was Mr. Bowman's question. "I've got $25 in egg money saved up," suggested Mrs. Bowman.

"You don't say!" ejaculated her husband. "Good for you. Now I'll just strike the boss for the other ten and we'll take the cow."

That sealed the bargain. And this is how the useful hen became the financial foundation for the big dairy. Had there been no egg money it would have been out of the question to buy the first cow.

So far so good, but the cow was 18 miles from Trinidad and how to get bossy home was the next problem, because bossy declined to leave the coal camp. Mrs. Bowman suggested that her husband get in the buggy and she follow the cow, which was tied on behind. Mrs. Bowman having been raised with stock knew better how to handle animals. Perhaps she did, but this was one time when wisdom failed. After repeated trials Mrs. Bowman gave it up, got in the buggy and started off, with H. W. pushing the cow. For a time it was nip and tuck between horse pulling toward Trinidad and cow holding back, but Bowman is a husky fellow and he finally got bossy in the habit of jogging along. At nightfall, as they say in the story books, as the last ray's of the setting sun flooded Fisher's peak with a golden glow, two tired Bowmans and one weary bossy arrived at the town lot which was to be bossy's future home.

Cow Goes Into Henhouse.

There was no dairy barn, no steel stanchions, no sanitary concrete floor, no electric lighted crib, not any of the fine appurtenances that grace the home of the queens of cowdom now reigned over by Gordonia Sir and King of Bowmantown. No, not even a stable for bossy, so she was led into the hen house for shelter, much to the confusion of the egg-laying colony whose industry was responsible for her being there.

Not long after these events Mr. Bowman made the discovery that he was a "dairyman." In this case "dairyman" means the husband of a dairywoman. For one morning Mrs. Bowman proudly displayed five pans of milk covered with thick cream. He agreed then and there that it looked like a good investment of $35, but it still made him sore to think of that 18-mile hike pushing a cow to Trinidad.

"Now if I can get the boss his ten I'll be tickled," he said. Two months later the tenspot was forthcoming out of milk money and the cow was now "clear of all encumbrances," constituting at that day and date the entire plant of Bowman's Sanitary Dairy, the morning milk route—a leg service—comprising five customers, served in five-pound tin lard pails.

By and by bossy went dry and Mr. Bowman enjoyed a brief vacation from milking. Soon a little black heifer came and then milk selling was resumed. In the meantime Mr. Bowman had engaged in the grocery business and he soon was able to use the delivery wagon for supplying his customers with milk. The black heifer brought forth a red heifer; the hens had been busy laying and hatching and Bowman's backyard was a sight to behold, too densely populated for comfort. More room had to be provided, so a place in the suburbs of Trinidad was leased at $200 a year. This looked like a large sum, but egg and milk money met it. Now the dairy seemed to grow by leaps and bounds; the poultry flock kept expanding and pigs were added as a measure of farm economy. This necessitated new buildings. The owner of the place soon failed to recognize it and he insisted that the Bowmans must take it off his hands. That meant assuming a mortgage on which the interest amounted to $240 a year. Then there was water tax to pay and upkeep of the property, but the cows and chickens had never failed to meet added responsibilities and the Bowmans did not hesitate.

Along Scientific Lines

They had been studying their business while watching it grow, and further development was along scientific lines. The rule growing from the necessity of gradual growth never to sell a heifer off the place, has been followed to the letter. Sires of quality head the herds comprising Jerseys and Holsteins, the milk being mixed and bottled on the farm, 40 per cent Jersey and 60 per cent Holstein. The product of every animal is tested for butterfat and bacterial count. There is one heifer in the herd now producing at the rate of 24 pounds of butter a week.

With a modern dairy plant comprising approximately 100 producing animals, with milking machines, weighing and testing records, with feed buying and mixing and weighing of balanced rations to supervise and the finished product to bottle and ship, Mr. Bowman often thinks of the life of ease he led when he sold goods in the mining camps before he pushed the first cow home.

Hens Are Doing Well

And as for Mrs. Bowman, whose love for domestic animals was the inspiration of the big business, she is still looking after the hens which form a profitable sideline, bringing in a revenue of $1,500 a year.

There are two big facts that stand out in studying the Bowman dairy. The first and greatest factor toward success has been the unwavering enthusiasm and faith of husband and wife in carrying on the undertaking; Mrs. Bowman's inborn love for farm animals; Mr. Bowman's natural shrewdness and aptitude for business; the capacity of both to make friends; their ability to pull together both in domestic and business life; just and generous treatment of employes, giving the "help" the same gentle consideration that the cows get. Economically there is this unusual fact: NOT A DOLLAR HAS EVER GONE INTO THE DAIRY EXCEPT ITS OWN INCOME, PLUS THE ORIGINAL TWENTY-FIVE DOLLARS OF EGG MONEY.

Sow Some Sudan Grass

With hay selling this winter at $18 to $28 a ton the farmer who last year provided himself with Sudan grass to carry the stock thru the winter, is not regretting it. Of course 40 to 50 cents a pound looks like a big price to pay for seed, but $3 to $5 per acre for seed is a mighty small outlay when one considers the possible results. The yield on non-irrigated lands frequently goes to three or four tons per acre, while seven or eight tons is not unusual on irrigated lands, where two cuttings are common. There is plenty of time to put out some Sudan. It has done well up to 6,000 feet and over, but is not generally recommended for altitudes over 5,000 feet. Nothing like it in the line of hay for tonnage, quick maturing qualities and resistance to drouth has ever been developed. This is one of the discoveries of the United States Department of Agriculture that will put millions of dollars into the pocket of the western farmer, when the crop is once firmly established.

Farm Tractor Meets Test of Altitude and Soil

MISUNDERSTANDINGS ABOUT FUEL QUESTION CLEARED UP

M. M. HUNTING

WE are all interested in any theory that promises to lighten our labors, but most of us have a tinge of Missouri blood in us, and usually want to see somebody else try it out first.

This has been the general attitude toward the farm tractor in Colorado and the surrounding states. It may be all right in the corn belt, but will it plow in the tough sod of the West? It may develop plenty of power on the belt at sea level, but how about in the mountains? These are some of the thoughts that have been passing through our minds, and we have preferred to wait until we had the word of some of our own neighbors before investing for ourselves. The few daring ones who have taken the plunge within the past two or three years are now prepared to give us their unbiased opinion.

From the standpoint of choosing a tractor, there is probably no group of states in the Union that presents such a variety of farm conditions as those under consideration in this article. There is irrigated land, dry farming territory, flat country, and mountainous country. In some sections, it would seem impossible to use anything except a large, powerful tractor, while in others only a light machine seems suitable, but experience has proved that a medium size machine pulling three or four plows is best suited to general conditions and adapts itself to the extremes better than either the very heavy or very light machine.

What the Farmers Say

The writer has before him six letters from farm owners in Colorado, Idaho, and Utah, all of whom are owners of small tractors and are well satisfied with their purchase, but feel that were they to buy another tractor it would be somewhat larger, but not too large. From La Veta, Colorado, comes the following, which probably states the situation correctly in the hill country: "I farm in the mountains, altitude 7,500 feet. Our fields are small, running from four to thirty acres each, irregular in shape, and very hilly. After seeing some of the larger tractors tried out here, I know that nothing but a small, easily handled tractor will work here. The only reason I would have for looking for a larger tractor in case I were buying again is * * * that it would give us a reserve power that we do not have now."

That even a small tractor is very capable of meeting extreme conditions is proved by the almost invariable statement of owners that the tractor has given entire satisfaction in plowing, which, of course, is the most strenuous work it has to do in this section of the country.

From Alamosa, Colorado, comes the following, which is a fair example of what several owners of smilar tractors say: "We are * * * pulling two 14-inch bottoms in the toughest kind of Western prairie sod at an elevation of 7,200 feet." The tractor was rated at 8 drawbar horsepower.

From a little different angle this man also covers the question of more power. He says: "Were I at a lower altitude, I would not have a heavier tractor for general farm work. I am contemplating buying another tractor in the spring and am talking of trying a larger size as we lose more or less power here on account of rarified air."

This precaution would only be necessary in case an owner bought a tractor which was really too small for his work, as nearly all machines are conservatively rated, so that they give their guaranteed horsepower at altitudes at which they will ordinarily be used.

The variety of work that has been done with tractors seems only to be limited by the ingenuity of their owners. Besides the regular routine of farm work, such as plowing, harrowing, disking, pulling mowers and binders, threshing and silo filling, several Western farmers speak in their letters of railing sage brush, moving buildings, hauling wagon trains, ditching for irrigation, pulling stones, loading logs, and pulling stumps. In fact, a tractor when once bought fills a hitherto undiscovered want for a source of drawbar power greater than is available from any conveniently handled number of horses. Such a source of power, available when needed, finds frequent use on any farm outside of the regular work for which the tractor is intended.

The advantages of a kerosene tractor for belt work are many. It is in most cases less expensive to operate than a steam tractor, requires less attention, needs no licensed engineer, and the danger of fire is practically eliminated. A kerosene tractor is as easily handled on the road as a steam tractor and is lighter per horsepower, so that there is less danger of breaking thru bridges. In most cases, the weight is placed low, which means safe operation on rough roads and side hills.

Kerosene as a Fuel

There has been much discussion with reference to kerosene as a tractor uel, and while some writers who would e considered authorities on many agricultural subjects contend that kerosene is not a successful fuel, we find upon investigation that they base their reasons upon the results of demonstrations that are now ancient history. They do not credit the manufacturers with having made any improvement in the last two or three years, whereas, the greatest progress along this line has been made since the price of gasoline threatened to become prohibitive for farm power purposes. A successful kerosene tractor is today an assured fact which no man can gainsay any more than he can discredit the success of the steam engine.

The greatest misunderstanding among both manufacturers and prospective buyers seems to be that a conventional type of gasoline motor can be made to operate successfully on kerosene by the addition of some device to successfully vaporize the heavier fuel. The truth is that an altogether different set of conditions is met with. The use of kerosene as a fuel requires different handling even as far back as the chemical analysis of the materials entering into the construction of the tractor. Nor are any of these details of minor importance, for just in proportion as they are perfectly balanced in the finished tractor, so will that tractor operate successfully or otherwise on kerosene.

The only way for a prospective buyer to be sure that he is getting a successful kerosene tractor is to see the machine doing actual work under conditions that he might expect on his own farm, and investigate for himself as to the quality and quantity of fuel used.

Simplest Designs Preferred

Care in the selection of a practically designed tractor is fully as important as your investigation of the kind of fuel on which it operates. There is much difference of opinion with reference to the number of wheels a tractor should have, whether the drive wheels should be placed in front or behind, the way the power is transmitted from the motor to the wheels, and many other details of design. Nearly every tractor has its peculiar advantages under certain conditions, but the practical all-around machine is the one which best meets all conditions to which it is likely to be subjected. The buyer can only learn the why and wherefore for the various designs, consider his own farming conditions, and use his best judgment in choosing. In general, the simplest design and the one which works in accordance with natural and mechanical laws, we have learned by experience to respect as the best.

The buyer should assure himself, however, of certain vital points—the tractor he chooses should have the correct speed for economical field and belt work, ample drawbar power, tractive force, thoro lubrication, adaptability to all kinds of implements, protection of moving parts against dirt, and must be able to operate steadily for any reasonable length of time. It should be equipped with the proper size pulley to give the correct belt speeds for machines having standard equipment, and for the benefit of the operator the tractor must be simple, efficient, and economical. If a tractor meets the majority of these requirements, and is built by a company that is responsible and equipped to furnish prompt service and repairs, the buyer may be reasonably sure that he is getting the best that the tractor market affords.

One Tractor Demonstration

The manufacturers of farm tractors met in Chicago on April 6, 1917, and arranged to put on one large National Tractor Demonstration for 1917. The location is to be selected by the demonstration committee; but in all probability Fremont, Nebraska, will be decided upon as the most logical place. But, in the event that Fremont is selected, it will be with the distinct understanding that it will in no wise be put on under the auspices of any one farm paper, but that all publications will be on an equal footing.

There is to be no restriction of any kind placed upon private demonstrations that may be put on by either manufacturers or dealers; but, on the other hand, they are to be encouraged, so long as they are not of a competitive nature. It is understood that this is a compromise arrangement, there being some who favored no demonstrations whatever for this year, while others favored as many as last year.

The resolution provided that each entrant in the national demonstration must be a bona fide manufacturer of tractors, tractor-plows or other tractor-drawn implements, and a member of the National Association of Tractor & Thresher Manufacturers or the National Implement and Vehicle Association.

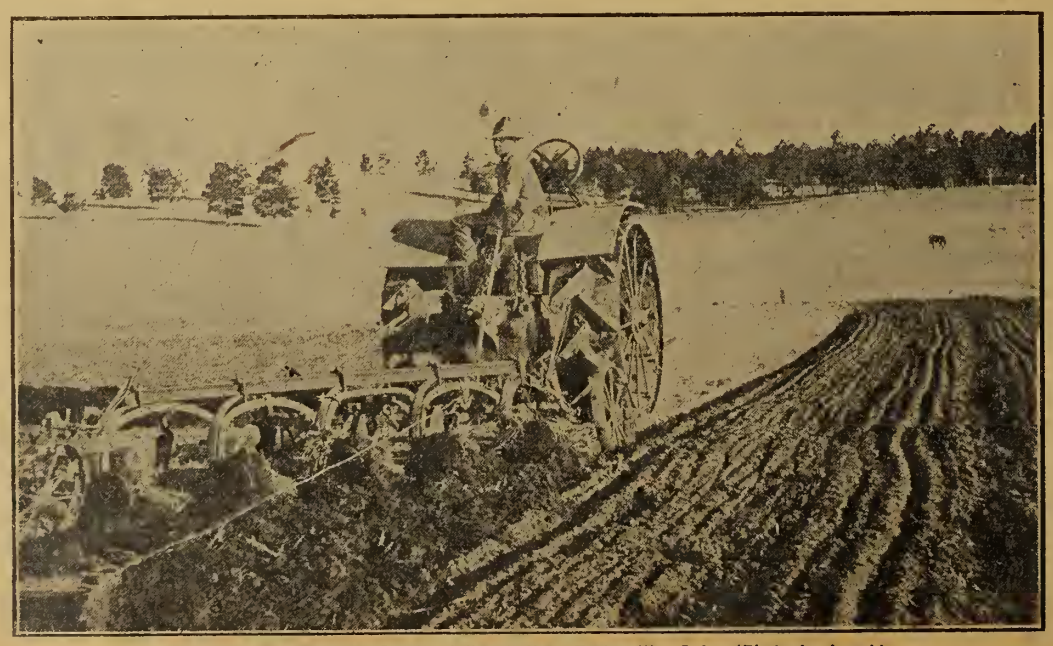
The high cost of materials, the uncertainty of transportation facilities, the war conditions, etc., have all had a strong influence in the matter of reducing the number of national tractor demonstrations to one. To put on a national circuit, similar to last year's, is very expensive; and it is thought wise to eliminate expense as much as possible because, even at the present time, tractors and plows are being sold at prices much below what they should be, based upon the present cost of material. The manufacturers regard this class of machinery as the most important element of farm equipment. At the present time the scarcity of farm help and the shortage of horses make it necessary for the farmer to look to this new system of farming as a relief and an aid to increased production, which is so much required by the country under prevailing conditions, and will be, for the next few years.

A Tractor Census

The Office of Farm Management of the Department of Agriculture, in cooperation with the Bureau of Crop Estimates, in February of the present year made an inquiry as to the number of gasoline and kerosene tractors in actual use on farms during the present season. The inquiry went to 32,000 selected correspondents. No account was taken of steam tractors, tractors purchased, but not delivered, tractors out of commission, or tractors used in road work or operations other than farming. The total in actual use on farms given as a result of this canvass is 34,371. The figures by states show Illinois to lead with a total of 3,202, Kansas being second with 2,287; Texas third with 2,235; Iowa fourth with 2,223, and North Dakota fifth with 2,137. The mountain states included in Western Farm Life territory were given as follows: Colorado, 525; Idaho, 262; Utah, 88; Wyoming, 186, and New Mexico, 83.

These figures are probably too conservative for the five states just named. The government report calls attention to the fact that in the sparsely populated and widely separated farming districts of the west, reporters would have less intimate knowledge of tractors in their respective localities than in the thickly populated districts of the east.

Tractor manufacturers are not assuming that the horse is to be eliminated. Horses will always be needed on the farm because they can go where the tractor cannot go and perform services which no machine yet invented is capable of performing. On many farms, however, a tractor can be bought for the price of the horses that can be spared and there will still be enough horses left to do the light work. The tractor should have the serious consideration of every farmer.



Tractor at Work on Keen Brothers' Ranch Near Eastonville, Colo. (Photo by Lauck)

A Boys' Thousand-Dollar Potato Patch

UTAH CHAP AGED 15 MAKES WONDERFUL RECORD

Max J Marshall

This is the story of how Max J. Marshall, a 15-year-old boy at Tooele, Utah, grew 958 bushels of marketable potatoes on one and four-fifths acres, and made a net profit of $900.50 on his season's work.

MAX J. MARSHALL

For the last three years I have been selecting my seed, always choosing the smooth, round, medium-sized, disease-free potatoes, and as a result I have some of the nicest potatoes in the country. This is how I made my crop in 1916:

Early in the fall I selected a plat of sandy loam soil on which alfalfa had grown for many years. On this old alfalfa stubble I spread a thin coat of mixed barnyard manure and plowed about eight inches deep. With this preparation the ground was left thru the winter.

On May 20 I began cutting my selected seed. Before cutting, however, I dipped them in a solution of corrosive sublimate (1 ounce to 30 gallons of water), to kill any possible rhizoctonia spores. Then in cutting the sets to plant, I had the stem end of each potato cut off and inspected to be sure of no fusaria. Each set had at least one eye and not more than two. I always leave all the meat possible with the eye to insure plenty of food for the young plant, until it gets a good root system started. Some people believe in just cutting the surface of the potato, leaving a large middle to waste, but this method does not suit me, so I use the other.

After having plowed the land once in April I began planting my potatoes on May 20. Having no potato planter, I dropped them in the bottom of a six-inch plow furrow. I planted the sets about nine or ten inches apart, to leave room for each plant to develop. Cutting about twelve inches each time with the plow, I planted in every other furrow. I did not allow my sets to stand over night, as I believe they dry out and do not germinate as readily. In planting I was very particular about getting them planted well so as to insure good stand, because if you have no stand you have no crop. After all were planted I went over the ground well with a leveler to smooth off the land and break the clods. Then I harrowed it thoroly, making a dry mulch to conserve the moisture.

When the young plants began to peep thru the surface of the soil I harrowed it again to promote areation, to form another mulch in place of the old one, which had hardened considerably, and kill any weeds that were growing.

The plants thrived well till they were about eight inches high, when they began to wither slightly, showing the lack of water. So on June 23 I gave them their first irrigation. I furrowed them with the cultivator, being careful not to make the furrow too deep. I turned a good-sized stream into each furrow until it got "down," then I shut it off.

The next irrigation came two weeks later, which was practically the same as the first. The third time, however, I gave them a fair soaking, leaving enough water in every furrow to run thru nicely. From then on, every two weeks each plant received six hours of water. On Sept. 16, after the sixth irrigation, they received their last water, as I wanted them to begin ripening.

After each irrigation, as soon as the land was dry enough, I ran the cultivator thru it to loosen the ground and to prevent evaporation and baking. I went thru the patch twice to hoe around the plants well, not having much trouble with weeds. I KEPT MY GROUND LOOSE. THIS IS WHAT MADE MY CROP.

On October 19 I began to harvest. Being without a digger, I had to plow them out. After going over the patch with the plow I replowed them to get the ones that had been missed. From the piles in the field I selected my seed for next year, always choosing the smooth, round, medium-sized, disease-free potatoes. Potatoes being scarce, I had no trouble in marketing them.

My plot of ground was 18 rods long and 16 rods wide, making an area of 288 square rods, or one and four-fifths acres. Off of the patch I secured 958 bushels of good marketable potatoes, making an average yield of 532 bushels per acre. I had two varieties, the Peerless and the English Russet. To grow a large patch is not like growing a quarter of an acre and multiplying it by four to get the yield. Potatoes being very scarce, I sold 890 bushels of them for $1 a bushel, and 68 bushels of selected seed for $2 per bushel, giving me a total of $1,026. Work put on this crop cost me $125.50. This subtracted from the selling price gave me the net gain of $900.50. In this I consider I made better wages than any other 15-year-old boy in the state of Utah in any other occupation. My success was brot about by a little careful attention to my work and the selection of good, clean, marketable potato seed.

In closing I will say that if a few more of us would pay a little more attention to our farm and select the "best for seed" this great state of ours would have some potatoes to be proud of.

A. L. Christiansen, leader of Boys' clubs for Tooele county, in his annual report to Prof. J. C. Hogenson, state leader in club work for Utah, gives the following summary of the cost of growing this young man's crop: Manure, $25; planting, $18; harvesting and marketing, $60; irrigation and cultivation, $15; miscellaneous expenses, such as water, taxes, etc., $7.50, making a total of $125.50.

Tooele City Utah
April 1, 1917

The Western Farm Life

Denver, Colo.

Gentlemen:

In reply to your request of the 27th instant I am sending my photograph.

If you could send me a few of the magazines after they are printed I would appreciate it very much.

Very truly yours,

J. Max Marshall

Utah State potato champion.

Wants Government Food Control

The agricultural or farmers' interests are being looked into and the farmers advised as never before in the history of this new world. There was a time when farming as an occupation was not looked upon with favor but time has brot a wonderful change. He is getting information from many sources pertaining to increased production, successful feeding and dairying. And why all this change? Simply because it has been proven time and again that on the prosperity of the farmer depends the prosperity of the whole population of the United States. Today he is being recognized as never before. As to the great responsibility resting on him, he is expected to feed and clothe the world. This once despised hayseed farmer is this day coming into his own.

All other trades, manufactures, and occupations have been organized to protect their own selfish ends; but the farmers have never been able to organize and co-operate to successfully protect their business. While all prices seem to be on the raise and everything seems high, yet the farmer that has more to sell than he has to buy, is still in the lead. With the exceptional high prices and still soaring, I firmly believe it is going to become necessary for the government to take a hand to regulate the price of foodstuff. The farmer who has stocked up on this high-priced machinery, stock and farm equipment must certainly have the present high price of farm produce maintained, or he will eventually go broke.

At the present greatly increased price of machinery and farm equipment, labor, feed and seed, no farmer can raise wheat and sell at a profit for less than $1.25 per bushel, or corn for less than 75c, or pork for less than $8 per 100 pounds. There must be some means provided, or some way by which the present prices for the staple articles of the farm can be maintained at or near the above prices or else many supposed well-to-do farmers will be bankrupt. No one can do this but the government. Stop all this gambling on the staple articles of the farm. Put a reasonable price on all articles necessary to sustain life. Give to the producer a reasonable profit on his products, such that will permit him to increase in quality as well as quantity, for with the increased population must come increased production or suffering.—A. C. Cauble, Holyoke, Colo.

U. S. Wheat Standards Fixed

The official grain standards of the United States for wheat were fixed, established and promulgated March 31, by the secretary of agriculture, under the authority given in the grain standards act. The standards are to become effective as follows: Standards for hard red winter wheat, soft red winter wheat, common white wheat, and white club wheat, are to become effective on July 1, 1917. The standards for all other wheats, including spring wheats, are to become effective on the first day of August, 1917.

The use of these standards after they become effective is required for wheat shipped from any point in the United States in interstate or foreign commerce and sold, offered for sale, or consigned for sale by grade. The act, however, permits the interstate or foreign shipment of grain sold by sample or by type, or under any description which is not false or misleading and does not include any of the terms of the official grain standards.

The standards for wheat promulgated today divide wheat into the following classes and sub-classes:

Class 1, Hard Red Spring.—This class shall include all varieties of hard red spring wheat, but shall not include more than ten per centum of other wheat or wheats. This class is divided into four sub-classes as follows: Dark Northern Spring, Northern Spring, Red Spring, Red Spring Humpback.

Class 2, Common and Red Durum.—This class shall include all varieties of durum wheat, but shall not include more than ten per centum of other wheat or wheats. This class is divided into three sub-classes as follows: Amber Durum, Durum, Red Durum.

Class 3, Hard Red Winter.—This class shall include all varieties of hard red winter wheat, but shall not include more than ten per centum of other wheat or wheats. This class is divided into three sub-classes as follows: Dark Hard Winter, Hard Winter, Yellow Hard Winter. Three other classifications are provided for. Those interested should apply to the Department of Agriculture at Washington for Service and Regulatory Announcements No. 22, which will be sent free.

Farm Loan Information

Farmers in the Center neighborhood (Saguache county), have organized a National Farm Loan association. Thirty-five prospective borrowers signed their names to the roll, subscribing for nearly $9,000 worth of stock and asking loans amounting to $175,000. Directors were elected as follows: W. E. Gardner, J. M. Carson, Frank Bowers, D. S. Jones, A. Roedel, W. J. Sproul and William Lilliard. The officers are W. E. Gardner, president; A. Roedel, vice president; H. T. Blood, secretary-treasurer.

Up to April 1st applications for federal farm loans had been filed with the Wichita Farm Land Bank by 161 Colorado National Farm Loan associations. Up to that time only one appraiser had been appointed for this state, namely R. T. Ambrose of Fort Morgan. He got busy immediately.

Loans on Homesteads

At the request of The Dakota Farmer the Federal Farm Loan Board has announced its attitude in regard to loans upon homesteads which have not been patented. As questions upon this point are numerous in the inquiries made in regard to farm loans, this ruling will be of great interest to many of our readers.

Where the homesteader has lived out the required period and received his land from the government without payment, his land office receipt will be accepted as evidence of basic title for the purpose of a loan. Where the homesteader commutes at the end of 14 months and pays for his land, the board will insist upon patent.

The reason for this distinction is plain. If a man lives upon his claim for the full term he is very certain to be acting in good faith with the intention of securing the land for a permanent home and continuing the cultivation thereof, but if a man lives upon the land the shortest possible time and desires to prove up as quickly as possible, there may be some ulterior purpose in mind; he may merely be speculating or even acting in the interest of another and facts may develop which would cause the government to refuse to accept proof and issue patent. Therefore in the latter cases the board will not accept the property as security until a patent has actually been issued.—Dakota Farmer.

Sweenied Mare

I have a five-year-old mare that was sweenied last September. I just discovered this spring that she was sweenied. What shall I do for her? It is only a slight sweeny but bothers her in pulling.—E. McG., Gypsum, Colo.

Give your mare a good blister with caustic balsam.

Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and thru the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Wound Will Heal

About two weeks ago I dehorned one of my cows about 8 years old and cut one horn so close as to leave a hole. While the otber born is solid, I noticed tbat tbere is some pus running out of tbat bole now like blood and water. Would like to know whether I should treat the same or wbether it will quit of its own accord. Would it be advisable to stop the hole up with sometbing? The bole is about as big as a pencil and seems to go way into the head. The horns did not bleed much, as I put a string around the head and pulled tigbt, wbich prevented bleeding.—G. F. W., Idaho.

This will probably heal without any treatment other than keeping the wound clean by keeping well washed with a mild antiseptic solution.

Infection of Navel

(1) I have had an awful loss in calves in the last two years. First, calves bave after four to ten days white scours.

(2) Last three with big briskets. The way tbis disease acts the brisket swells tbree or four times natural size. Have cut several open and blood has nearly all turned to yellow water. Where there is any fat it looks transparent, of a yellowish color, and bave scours.

(3) Have lost two or three witb pink eye. Calves' eyes get watery and they seem to go blind and sick. Won't eat anything and linger on for a month or two and then die. I have done everytbing I can think of to save tbem.—W. F. M., Cumbres, Colo.

(1) Be sure your cows calve in clean localities, then as soon as the calf is born the navel should be cleaned and disinfected and painted with tincture of iodine.

(2) The so-called brisket disease is a disease of high altitudes and the only cure is to remove the animal to a low altitude.

(3) Your diagnosis regarding your calves with pink eye is not sufficient to justify the suggestion of a remedy. Calves do not die from the effect of pink eye and it is possible that yours are affected with some other disease. Better get a competent veterinarian to make an examination and prescribe treatment.

Necessary to Operate

Some three months ago one of my milk cows, 10 years old, hurt one of her eyes slightly. First water ran from it, then seemed to have growth in one corner, angry looking, finally about one-third of the eye covered, then a thick yellowisb matter came from it, sometimes bleeding a little. I bathed with salt water and borax, later boracic acid. I called in a veterinarian, wbo advised me to wash it with boracic acid, then wasb with gasoline twice a day. I tried it, but it seemed to put the cow in such agony that I discontinued the use of gasoline. The eye is getting much worse; the whole eye is one big sore.—W. G. H., Norwood, Colo.

I judge this to be a malignant growth that can only be removed by a surgical operation which would probably remove not only the growth but the eye itself. I do not think any application to the growth will do any good.

Plant Oats in Good Seed Bed

Please advise me regarding my oats sowing. I am eigbt miles north of Willard; not sandy ground as nearer Willard. I have wheat stubble. Did not get it plowed last fall, too dry, but in fine condition now. Shall I plow early and harrow twice, then sow the oats, or sow tbe oats and plow the ground? We used to do this latter in Iowa.—G. W. D., Willard, Colo.

The only practical way to seed small grain is on a thoroly prepared seed bed. The ground should be well plowed and harrowed and cross-harrowed until the seed bed is in fine condition. Then drill the grain and you will stand a good chance to harvest a crop. The old plan of sowing oats and plowing under was practiced by our grandfathers who knew nothing about modern methods. It will also be well to harrow your oats after they have come up, so that the soil may not be allowed to crust and the moisture to evaporate. This harrowing or cultivating of the small grain can be kept up until it is several inches high.

Stick to Pinto Beans

Will you please give me advice about some beans? Last year I planted some white beans hut I don't know the name of them. They are white and a good deal larger than navy beans and better for table use and will cook better. I wish to get your advice if I should plant them this year or plant the navy beans? Which of the two will sell best for the market?

For dry land purposes we would advise the planting of pinto beans, commonly known as the Mexican. In our issue of March 15th on page 4 you will find an article by Prof. Kezer giving full details about preparation of soil, time to plant, cultivation, etc. Pinto beans will outyield any variety of white beans on dry lands and they bring good prices. If you wish to stick to the white beans, the navy, of course, is the best from a market standpoint. It is not always a question of quality. The larger bean you mention may be a better table bean than the navy, but if there is no demand for same, it will not pay you to grow them except for your own use.

640-Acre Homestead Filings

When may I expect action on my filing under the 640-acre homestead act made two months ago?—J. M., Wyo.

Present indications are that there will be months of delay. Reports from Washington are to the effect that 50,000 filings have been made under this act and the land office has not yet made any designations, because the appropriation for that purpose is still pending in Congress. The sum needed for this work was a part of the sundry civil appropriation bill, which failed of passage in the closing days of the last Congress because of the Stone-La Follette filibuster.

Must Comply With Laws

A files on 160 acres as a homestead, does the plowing and cropping, builds a shack, but does not live there. A commutes in 14 months and sells tbe 160 acres to B. C wants to know if he proves that A did not live there continuously for 14 months will the land be taken away from B and opened for filing? If opened for filing, will C bave the first chance to file?

Can a man file on land with a living mountain stream running thru it as a "desert?" This desert was filed and proved on before 1911.

A files on 80 acres as a homestead which is the only time he ever filed on any kind of land and is 6 miles from a railroad. He will prove up in November, 1917. Can A file on 80 acres in one section and file on 40 acres in another section and so on until he has 320 acres of land? There is no land joining the 80 acres that he can file on. If he can file on land in different sections does he have to wait until he proves up or can he file at once?—C. B., Ft. Benton, Mont.

(1) If A did not comply with the homestead laws and this can be proven, the 160-acre tract is subject to contest and if C files the first contest he will have first right to make a new entry providing the contest is successful.

(2) Yes.

(3) No. The additional land filed on must be in one body. He can file at once on sufficient additional land to make up the 320 acres, providing it is on dry land.

LEGAL QUESTIONS

The Following questions regarding legal matters have been answered by Peters & Barker, Attorneys, Equitable Building, Denver, Colo.

The Wife's Part

If in Idaho a man who has a wife, sisters, brothers and nephews should die without leaving a will, what part of his personal and real estate would his wife inherit? Are his relatives equal heirs witb his wife?—S. M. G., Paul, Ida.

The law of descent of the state of Idaho provides, if decedent leaves a surviving husband or wife and one child, then the estate descends in equal parts to the surviving husband or wife and child.

If more than one child, one-third to the surviving wife or husband and the remainder descends in equal parts to the children or their lawful issue.

If decedent leaves no children, one-half goes to the surviving husband or wife, and the other half to the decedent's father and mother in equal parts.

If decedent leaves husband or wife but neither children, father nor mother, the whole estate goes to the surviving husband or wife.

We advise that should you die leaving a wife but no children and neither a surviving father nor mother, then the whole estate would descend to your wife. This law of descent, however, may be varied by the terms of a will.

Cannot Fence Public Road

(1) What right has a man owning adjoining land to fence across a strip left for a road in order to avoid building a fence on the other side?

(2) Can he be made to remove such a fence if he has made a gate to let people thru?

(3) In case he has a right to make sucb a fence, can he be made to put wire on tbe fence he gets the use of by it?

(1) If this is a public road, no one has a right to erect any fence across it, even tho they leave gates to go thru. If it is a private road, or simply a private right of way, then the owner would be entitled to fence across it by leaving a suitable gate.

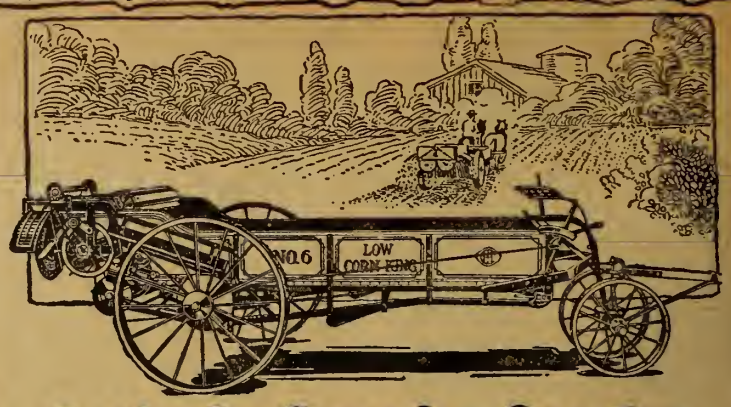
(2) If it is a public road, he can be made to remove the gate by taking up this matter with the district attorney.

(3) In case of a partition fence between two adjoining land owners, each party must keep up his half of the fence, and stand one-half of the expense of keeping it in repair.

Notarial Commission

Will you please advise me who is the proper authority to apply to and how to proceed to become a notary public and what the charges are for same?—J. C. C., Las Animas Co., Colo.

You should apply to the secretary of state for notarial commission. He will furnish you a form of petition and bond. Your notary commission when issued should be recorded with the county clerk. The cost, including the seal, will be about $10 or $11.



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It is a long jump from the ordinary machine to the modern low spreader with its double beater and wide spread. Every farmer who knows the value of good spreading is buying one of these wide spread machines. As a matter of fact, no farmer can afford to buy any other kind, because the saving of time and labor and the better job of spreading done by a Low Cloverleaf, Low Corn King or Low 20th Century makes them worth more than ordinary spreaders.

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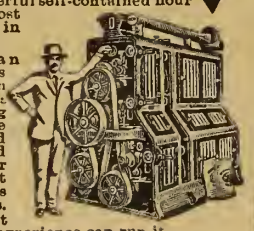

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Canada Offers 160 Acres Land Free to Farm Hands

Bonus of Western Canada Land to Men Who Assist in Maintaining Needed Grain Production

The demand for farm labor in Canada is so great that as an inducement to secure at once the necessary help required, Canada will give one hundred and sixty acres of land free as a homestead and allow the farm laborer, who files on land, to apply the time he is working for other farmers as residence duties the same as if he had lived on the land be bad applied for. This offer made only to men working on Canadian farms for at least 6 months during 1917, thus reducing the necessity of actual residence to 2 years instead of 3 years, as under usual conditions. This appeal for farm help is in no way connected with enlistment for military service, but solely to secure farm laborers to increase agricultural output. A wonderful opportunity to earn good wages while securing a farm. Canadian Government will pay all fare over one cent per mile from Spokane to Canadian destination. Information as to low railway rates, etc., may be had on application to

J. L. PORTE
Canadian Government Agent
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Drilling Wells is a Year Round Business

Drilling Water Wells is a profitable, healthful year-round business. There are wells all around you to be drilled. Don't you want to get into a money-making business for yourself? Write for particulars. Star Drilling Machine Co. 669 Washington St., Akron, Ohio

More About Pinto Beans

DISTRIBUTION of bulletin 226 entitled "Beans in Colorado and Their Diseases," by Alvin Kezer and Walter G. Sackett, was begun about April 10th and copies are now in the hands of many farmers. By an arrangement with the State Experiment Station we were able to publish in our issue of March 15th the chapters on preparation of soil, planting, cultivation and irrigation, some time in advance of publication of the bulletin. The subject is of such importance in all of the mountain states that further portions of the bulletin will be published from time to time, so that farmers in Utah, Wyoming, Idaho and New Mexico may have the benefit of the information. The following summary by Prof. Kezer will be of value:

Beans are becoming an increasingly important crop in Colorado.

They are well adapted for both dry farming and irrigated conditions.

The "Plains" section is almost entirely adapted for bean production. They do well also in mountain valleys at altitudes not to exceed 7,000 feet. In many localities 6,000 feet is too high for their proper growth because of the shortness of the season and the tendency of early and late frosts.

Beans are an excellent cash crop, with a well established market and market facilities.

In Colorado the chief market bean is the pinto. Navies, teparies and the Red Mexican or Red Miner are grown to some extent.

Many beans are being grown under contracts with seed houses. These beans represent a number of different varieties produced for seed, because of peculiar advantages for clean seed which the semi-arid climate possesses. The chief danger of seed bean contracts is injury to standard markets by growers attempting to throw rejected seed onto the standard markets.

Beans are a hot weather crop, consequently, they should not be planted until frost danger is past. In most localities this will be approximately June 1st.

Planting should be shallow. Planting may be done preferably with the regular bean planters. Corn planters with bean plates may be used. The ordinary grain drill, stopping the proper number of holes, is feasible where necessity requires.

Beans are a shallow rooted crop. Consequently the first cultivation should be the deepest. Later cultivation should be as shallow as the first cultivation, or even shallower. Cultivation should not be over 3 inches.

In irrigated districts, beans should be irrigated so as to keep the beans growing. A very dark green color is generally indicative of a need of water. Beans should not be irrigated later than full bloom on most soils, as later irrigation will delay maturity and not increase yield materially. Ordinarily one to two irrigations are sufficient.

Harvesting should be done preferably with a bean harvester. This is especially true where any considerable acreages are planted. On very small acreages, they may be harvested by taking the mold board off the plow or by using a shovel.

Beans shatter in threshing very easily, consequently the bean huller should be used unless the acreages are very small. There are special attachments which may used on the regular grain separator, provided the separater is run at very low speed. Patches of one to two acres can be threshed with a flail as cheaply as by machine unless a machine is near. Machines are available for cleaning and should be used, as they increase market value.

Pinto beans, the chief Colorado market sort, will average from three to eight hundred pounds under dry lands and may yield as high as eighteen hundred. The same beans will average from twelve hundred to two thousand pounds under irrigation, and may yield as high as even three thousands pounds or even above.

Market prices may be increased by putting beans up in uniform packages and having them thoroly cleaned.

Bean straw should be carefully saved, as it is a valuable feed. This applies especially to dry lands.

Beans make an excellent rotation crop. Wheat on dry land after beans will do as well as after clean summer fallow most seasons.

The yield of beans may be increased and their quality improved by wise field selection.

Seed beans should be hand picked to get uniform quality and freedom from disease. Care should be taken not to plant beans which have been frost bitten.

$1150 F. o. b. Racine

Mitchell Junior—a 40-h. p. Six 120-inch Wheelbase

Price will be advanced to $1195 on May 10th

Mitchell SIXES

$1460 F. o. b. Racine

7-Passenger—48 Horsepower 127-inch Wheelbase

Why Other Cars

Omit These Mitchell Extras

The Mitchell offers you

31 extra features—

24 per cent added luxury—

100 per cent over-strength.

When you see these extras—each a wanted feature—you will ask why others don't include them. This is to tell you the reason.

Cost $4,000,000

The Mitchell extras, on this year's output, will cost us $4,000,000. To add them to the ordinary car would bring the price too high.

In the Mitchell plant, we save them in factory cost. John W. Bate, the great efficiency expert, has worked for years to do that.

This entire 45-acre plant was built and equipped by him. And every detail is designed to build this one type economically.

He has cut our factory cost in two. No other plant could build a car like the Mitchell at anywhere near our cost. And that saving goes into these extras.

A Lifetime Car 100% Over-Strength

The 31 extra features—like a power tire pump—will seem a great attraction. The added luxury—24 per cent—makes the Mitchell the beauty car of its class.

But our greatest extra is the double strength in each important part. In the past three years we have doubled our margins of safety.

TWO SIZES

Mitchell—a roomy, 7-passenger Six, with 127-inch wheelbase and a highly-developed 48-horsepower motor.

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Also six styles of enclosed and convertible bodies. Also new Club Roadster.

Over 440 parts are built of toughened steel. All safety parts are vastly oversize. We use a wealth of Chrome-Vanadium steel. We use Bate cantilever springs, which never yet have broken.

We have proved that Mitchells can run 200,000 miles. Few owners will live to wear a Mitchell out.

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Now there are two sizes—Mitchell and Mitchell Junior. But even the smaller has a 120-inch wheelbase. Both sizes offer you values far beyond similar cars.

See these new models. See all the extras they embody. You will want such a car as the Mitchell when you buy a car to keep.

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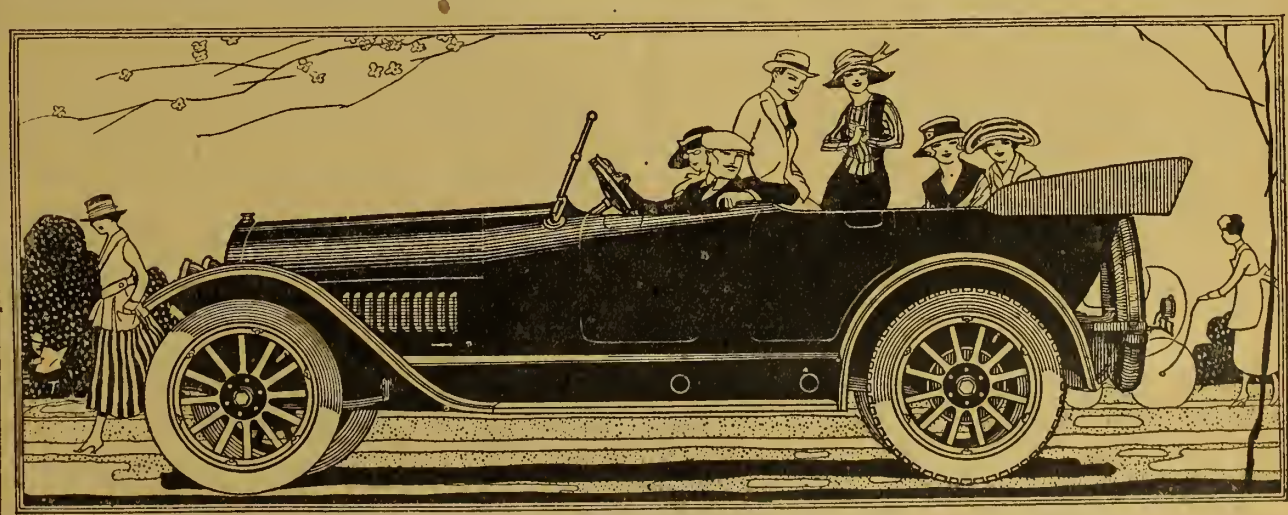

Concerning Hail Insurance

Your article in Western Farm Life about optional hail insurance is very interesting. But I do not believe it is possible since it will take years to put it in operation. I believe that the farmers of Colorado should organize mutual hail protection associations, since there is no longer a question about us buying our protection from the stock hail companies. Their charges are prohibitive. There are mutual hail protection associations in Minnesota, Dakota and Missouri that are carrying millions of dollars in risks and have been protecting their members for years, have paid all losses in full and it does not cost the members nearly half what the stock companies charge for hail insurance.

The Canadian plan is good but it will take years to get it in operation. There is no question but what it would be bitterly fought by certain interests, while a farmers' mutual association would not have any opposition, only from the old line companies. And if they fought it, it would result in boosting the mutuals. Hence I believe that the farmers of Colorado should and will organize mutual hail protection associations, especially the farmers east of the mountains.—W. J. Walsh, Wray, Colo.

Consolidation of Rural Schools

Would you kindly give me through the columns of your paper the laws of Colorado regarding the consolidation of rural schools?

(1) What steps must be taken before a district can vote on consolidation?

(2) Who can legally vote on the issue?

(3) What majority of votes does it take to carry election?

(4) Is the question of transporting the pupils decided by a separate election, and what majority does it take to carry and who are legal voters in the election pertaining to transportation?

(5) Who are legal voters and what majority does it take in the election to bond a district on consolidation?—J. C. S., Las Animas Co., Colo.

(1) A plan to educate the people and inform them of the advantages of consolidation should be carried on before an election is called. After this has been done, and the sentiment seems to be sufficiently favorable to warrant it, a special election should be called to vote on the question of consolidation. School boards may upon their own initiative call this election and when petitioned to do so by one-fourth of the legal voters in the district, they are required to call the election.

(2) Anyone who is qualified to vote at a general election. They need not be taxpayers to vote at this election.

(3) A majority vote is all that is required.

(4) When the district votes to consolidate, the school board is thereby empowered to furnish transportation. A separate election for this purpose is not necessary.

(5) In order to vote at such an election, the voter must be a citizen of the United States, a resident of Colorado one year, of the county ninety days and the school district thirty days. A person does not need to be a taxpayer to vote at this election.—C. G. Sargent, Specialist in Rural Education, Colo. Agricultural College.

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Ex-Governor Ammons to the Business Man

In the present war crisis, as never before, the friendship existing between the merchant or professional man and the farmer must be utilized. The wherewithal to feed a team, to purchase a few bushels of seed, to break up a few extra acres, if extended to the farmer at the present time will mean incalculable good and may turn the scale in the coming season from famine to plenty. Business men are acquainted with many farmers. Why should not every business man get in touch with his friend in the country? Ask him what he needs. You would be surprised to know what a boost it would be to many a farmer of the state right now to have fifty, seventy-five or one hundred dollars shoved into his hand as a loan, and told to use it in planting crops, to get his teams in better shape for the plowing and cultivation, to effect some necessary machinery repairs, to hire an extra man or two during the planting season. In the long run it means doing a bit for Uncle Sam. Every pound of grain, every bushel of potatoes, every ton of forage that can be brought from the ground in the coming season will be needed in the conduct of the war. Never in a man's lifetime will there be a better opportunity to render a patriotic service.

ELIAS M. AMMONS.

About the County Agent

"As to a field man that knows everything, they don't know the first thing about farming, and don't expect to know. So why in all common sense, try to shove a field man onto the farmers unless they want one, which I am sure they do not. I have very earnestly talked this over with some of the farmers and made many inquiries, and I find where one man is in favor of it twelve are against it."

This is a quotation from a communication appearing in a newspaper published in Colorado, in a county where the question of appointing an agriculturist is under advisement. The farmer whose name was signed to this communication is honest in his opinion that there is no need for a county agent or adviser. However, he makes some serious mistakes in his argument. The first is the assumption that a county agent thinks he "knows everything" and the second that "he don't know the first thing about farming." The truth is, the county agent, in order to qualify, must possess a technical knowledge of agriculture as well as a practical, working knowledge gained from experience.

While he is not presumed to "know it all," he must know where and how to get the information if he is asked a question that he cannot answer offhand. He has at his quick command sources of information that the average farmer does not possess. Only a small percentage of farmers are equipped with agricultural college training and the man who wants to make a success of his business gladly welcomes aid from an expert. The time has forever gone by when the farmer can afford to disdain knowledge gained by long years of scientific investigation. Farming is a highly specialized business that requires an unusual degree of native intelligence on the part of the man following the occupation, and the ability and inclination to take advice from sources that have worked out theories underlying the various branches of science which are brot into practice in farming. No profession comes into touch with so many branches of science and in no occupation requiring exact knowledge is there so much guesswork as in farming. The farmer has discovered this to his cost, consequently wherever there is a desire for progress the county agent is in demand. Opposition to the movement is almost wholly due to a lack of knowledge of the functions of the agriculturist and of the successful way in which this system is working in hundreds of counties in the United States.

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Dig a Pit for Your Feed

Farmers on the plains in New Mexico, Colorado, Wyoming, Utah and Idaho and in many mountain valleys where soil conditions are right, can provide themselves with succulent feed for their stock for next winter's use by digging pit silos. It does not cost much to excavate a pit silo and cover the walls with two coats of cement plaster. And Prof. Morton advises that, in the present emergency, in many soils the pit silo can be used safely one season without plastering. Corn, the grain sorghums, or sweet sorghum may be grown for silage. All kinds of stock need succulent feed. Dairy cows must have it to yield a good flow of milk when there is no grass. A silo is the best insurance of an income that the stock farmer can have and if he cannot afford an erect silo, he can dig a pit which will serve him well for the present.

Remember the past winter's experience with the price of feed of all kinds and no hay to be had in some sections at any price. It is still time to put in Sudan grass, or to plant the grain sorghum which best suits your locality, moisture conditions and altiture, or to put in a good acreage of cane for hay. With roughage in the stack and a couple of pit silos filled to the brim, the farmer can laugh at blizzards. In the rush for money from wheat or beans, don't forget that meat and milk are just as badly needed.

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President Waters' "Dry" Suggestion

Henry Jackson Waters, president of Kansas Agricultural college, at a conference on the food situation called by Secretary Houston, made a suggestion that will find a hearty response everywhere on the farm. He stated that by closing the breweries and distilleries the country would save annually 618,508,095 bushels of grain, which now is manufactured into liquor. Furthermore, the equipment of these establishments could be used for the manufacture of munitions, to refine fuel oil for tractors and even to can fruits and vegetables. The labor taken from the liquor industries, he suggested, could be more profitably employed on the farm. Here is a suggestion that, from the economic standpoint alone, should be adopted. That it is entirely feasible has been shown in Colorado, where the prohibitory law resulted in the closing of a number of brewery plants, which were converted into creameries, malted milk factories, and one plant at least is now being fitted for a meat packing establishment.

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The Land Office and Farming

The Interior Department has issued a bulletin on "Farming as a Patriotic Duty," in which mention is made of the fact that the government still has millions of acres available under the homestead laws. We quote as follows: "Besides the individual personal good it would do these people to get out of the city and into the country, the support of the army and the well being of the nation demand that vacant farming lands be taken up and developed as a plain matter of defense."

This is all very good and quite true, but the interior department is really more at fault than the prospective back-to-the-lander in town for failure to get the man on the land. Our good and great government has beneficently placed at the disposal of the citizen these millions of acres, but it might as well advise him that there are millions of acres to be had free in the interior of Siberia. The government has never assumed the proper responsibility for the settlement of our vacant lands. It has, consciously or unconsciously, made it very difficult for the landless man to get accurate information about the manless land. It publishes statements of acreage available in each state, and then leaves it to the prospective settler to nose out thru private sources and at much expense the exact locations, the character of the land and the conditions under which it must be farmed.

Canada, Australia and other British colonies not only give the prospective settler every possible facility for learning about vacant lands, but extend financial credits in certain circumstances to those who do the pioneering.

While we grant that it is sufficient to give the settler a homestead without lending him government funds to develop the land, there is no reason why there should not be at his disposal exact information regarding the location of homesteads, together with counsel from the Department of Agriculture as to the climatic and farming conditions that must be met in any given locality. All of this information is in possession of the Department of Agriculture, but there is no co-operation with the interior department or its bureau, the general land office, to place this in possession of those desiring to file on lands.

Every acre of government land should be classified and mapped in such a way that the landless man may be able to judge, before he spends several hundred dollars in railroad fare and location expenses, whether the land is fit for his purpose. He should be given specific information about rainfall, temperatures and other matters bearing on agriculture, as well as on the general farming practice in any given locality where free land is still to be had. Under our present laws and regulations the government says to the prospective settler:

"Here's all outdoors to pick from. Take your share. We'll take the fees and we don't care what becomes of you afterwards, so long as you do not deviate one hair's breadth from our red tape."

This is the sort of a settlement policy—or lack of policy—that has resulted in the "prove up and sell out" game from which the West is just recovering. In fact, many sections are still held back in their development thru the failure of the federal government to intelligently direct the applicant in his search for a home.

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Allyn H. Tedmon, agriculturist in Big Horn county, Wyoming, reports the largest and most successful farmers' institute ever held in that county. Fiftyo-ne meetings were held during the month, with an attendance of 2,854 persons. The interest was in proportion to the attendance.

PRESIDENT WILSON TO THE FARMER

The President of the United States has issued a proclamation calling upon all citizens to enter the great army of service, to the end that the nation may be borne thru its test of fire efficiently and with honor. The newspapers have already published this proclamation in its complete form and what follows is directed especially to the farming population. This appeal should silence any suspicion that might be harbored to the effect that the present movement for greater production was being engineered for some selfish end.

* * * The industrial forces of the country, men and women alike, will be a great national, a great international, Service Army—a notable and honored host engaged in the service of the nation and the world, the efficient friends and saviors of free men everywhere. Thousands, nay, hundreds of thousands, of men otherwise liable to military service will of right and of necessity be excused from that service and assigned to the fundamental, sustaining work of the fields and factories and mines, and they will be as much part of the great patriotic forces of the nation as the men under fire.

I take the liberty, therefore, of addressing this word to the farmers of the country and to all who work on the farms. The supreme need of our own nation and of the nations with which we are co-operating is an abundance of supplies, and especially of food stuffs. The importance of an adequate food supply, especially for the present year, is superlative. Without abundant food, alike for the armies and the peoples now at war, the whole great enterprise upon which we have embarked will break down and fail. The world's food reserves are low. Not only during the present emergency but for some time after peace shall have come both our own people and a large proportion of the people of Europe must rely upon the harvests in America. Upon the farmers of this country, therefore, in large measure, rests the fate of the war and the fate of the nations. May the nation not count upon them to omit no step that will increase the production of their land or that will bring about the most effectual co-operation in the sale and distribution of their products? The time is short. It is of the most imperative importance that everything possible be done and done immediately to make sure of large harvests. I call upon young men and old alike and upon the ablebodied boys of the land to accept and act upon this duty—to turn in hosts to the farms and make certain that no pains and no labor is lacking in this great matter.

I particularly appeal to the farmers of the South to plant abundant food-stuffs as well as cotton. They can show their patriotism in no better or more convincing way than by resisting the great temptation of the present price of cotton and helping, helping upon a great scale, to feed the nation and the peoples everywhere who are fighting for their liberties and for our own. The variety of their crops will be the visible measure of their comprehension of their national duty.

The Government of the United States and the governments of the several States stand ready to co-operate. They will do everything possible to assist farmers in securing an adequate supply of seed, an adequate force of laborers when they are most needed, at harvest time, and the means of expediting shipments of fertilizers and farm machinery, as well as of the crops themselves when harvested. The course of trade shall be as unhampered as it is possible to make it and there shall be no unwarranted manipulation of the nation's food supply by those who handle it on its way to the consumer. This is our opportunity to demonstrate the efficiency of a great Democracy and we shall not fall short of it!

* * *

WOODROW WILSON.

Comment by Farmer Putnam

MAKES ATTEMPT TO JOIN THE ARMY BUT JOSEPHINE, HIS WIFE, HAS OTHER PLANS

Denver, Colo., April 25, 1917.

WHAT'S a feller goin' to do with a woman like Josephine? I swan I sometimes don't know what to make of that woman. I'd like to git some advice from some of you other old codgers that's been married 25 or 30 years. What do you do when your wife gits the tantrums? I don't like to be airin' my family troubles but I cain't bring the woman to reason by no other means. I'm goin to leave you-all to judge who's right about this here controversy. Fust place, Josephine's been stayin' up on the ranch and the place has been snowed in most of the winter, but she's had the boys thar to keep up the firewood and milk the cows so she's been comfortable, while I been a drivin' around over the prairie more or less, chasin' jackrabbits with county agents and doin' other work in the interest of better agriculture.

Now when this here war broke out I set down and wrote Josephine like this. (I kept a copy of my letter so's thar wouldn't be no dispute about this here question when my grandchildren looked up the record of their heroic granddad, T. J. Putnam, who offered his services to his country on the altar of patriotism.) Here's the letter:

Dear Josephine: I guess you seen in the Fort Collins papers that the war has broke out. I today offered my services to President Wilson. If I do not see you and the boys ag'in remember that I died with my boots on.. Keep my memory green and teach the boys to folier in their father's footsteps who knew not danger when his country called. Hurrah fur the Stars and Stripes!

Yours lovingly,
TOM.

P. S.—Bein' as I've had lots of farmin' experience and worked on farm papers I ast the President to put me in the commisery department as a major general of supplies.

Well, in about a week I got a letter which follers:

Dear Tom: Yours received. Yes, I seen where the war broke out in the Fort Collins papers. Yes I seen from your letter that you're offerin' your services to the President. But Tom you hadn't ought to say nothin' to me about dyin' with your boots on and keepin' your memory green. I kin remember one time when you come near dyin' with your boots on, and that was when the old Jersey bull we had back in Missouri chased you outen the pastur, and you fell over the fence so fast that you went in the mudhole on the other side. They was some excuse fur runnin' from that bull Tom, but do you recolleck the time I woke you up one night when somebody was a-rattlin' the screen and I thot it was a bugler and you turned your back to duty and "knew not danger" when your wife called, and she had to git up and chase the tramp away that was a-tryin' to break in. I'll keep your memory green teachin' your boys not to foller in their father's footsteps when he goes away all winter and sets around a radiator in them Denver hotels chinnin' with them paper patriots that's a increasin' our production. I felt right good when I seen by the fust part of your letter that you was a-goin' off to war, but when I seen the P. S. I knowed that you hadn't changed none.

Now Tom let me give you some advice. The President has got all the major generals of supplies and whatnot that he kin use. They is just two ways open fur you to serve your country, one is by joinin' the ranks as a private and t'other by you comin' back on the ranch and doin' some real work in increasin' production by helpin' the boys plant the spuds and git in the oats. I ain't tryin' to dictate to you what your duty is, but I will say that if you choose to come home I'll be willin' to make the necessary sacrifice fur my country and let you come back, providin' you'll work. I don't want them boys to enlist Tom, and if you'll git in as a substitute fur them I think you'll be doin' your country a hull lot more good by goin' to the front —or the back, fur that's where you'll land the fust chance you git.

Dear Tom, when you come bring up a sack of sugar, a doz. cans of corn, six cans of tomatoes, 3 pounds of coffee, a dime's worth of laundry soap, a package of bakin' sody and the last Delineator. We hain't got but a little hay left in the mow and if the snow don't go off soon we'll have to feed pine needles. We're increasin' the production up here in the Stove Prairie country; eighteen of our cows dropped calves this month. You might stop and see Doc. Glover and git one of them squirtin' outfits fur vaccinatin' the calves when you come up.

Yours lovingly,
JOSEPHINE.

P. S.—If you still feel like fightin' when you git thru readin' this furgit Germany, come up to the ranch and rassle with the cattle. If them spoutin' patriots would git behind a plow and talk less we'd git bigger crops.—J.

All a feller kin do under them circumstances is to take his abuse and feel that he's bein' persecuted fur his patriotism and love of conntry.

THOMAS JEFFERSON PUTNAM.

SELF-OILING WINDMILL
With INCLOSED MOTOR
Keeping OUT DUST and RAIN – Keeping IN OIL
SPLASH OILING SYSTEM
Constantly Flooding Every Bearing With Oil, Makes It Pump In The Lightest Breeze And Prevents Wear
OIL SUPPLY REPLENISHED ONLY ONCE A YEAR
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Gasoline Engines — Pumps — Tanks
Water Supply Goods — Steel Frame Saws
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Kafir, Milo and Feterita

At the conference called by the Farm Bureau of the Denver Civic and Commercial association some of the experts advocated the growing of grain sorghums for Colorado. Please give us a little information about these crops. I don't think kafir will mature in our altitude.—L. S., Arapahoe county.

Grain sorghums were advised as a dry land crop for southeast Colorado and not for the state as a whole. There are other sections of the state as well as Utah and Idaho where one or the other of the grain sorghums or kafir group, including kafir, milo and feterita, will do well. Of these three, milo seems to be best suited for our altitude and cool nights as a grain crop. Carlton R. Ball, agronomist for the Department of Agriculture, in a government bulletin, says: "Milo is widely grown in western Texas and adjacent parts of New Mexico, Oklahoma and Kansas. It is well suited to the entire southern half of the plains region below 4,500 feet elevation. It can probably be profitably grown as far north as South Dakota and westward in Colorado and New Mexico to elevations of about 6,000 feet; likewise in the Great Basin region."

Milo is a ninety-day crop and comes much nearer maturing in that period when conditions are favorable than most of the so-called ninety-day corns. It has the additional advantage of being able to withstand more drouth than corn. During hot, dry weather it literally stands still, quickly recovering with the first rain and resuming its growth. Under the same conditions corn dies. It may be planted two weeks later than corn. At altitudes of 5,000 feet or over its growth is checked by cool nights. Dwarf kafir needs more moisture than milo. Feterita has, in some seasons, shown a superiority to both kafir and milo in drouth resistance and has matured at higher altitudes than kafir.

Grown for silage the grain sorghums give a greater tonnage per acre and are equal in quality to the average dry land corn.

The cover picture on this issue shows a field of feterita at an altitude of 4,000 feet. At the Bennett Farmers' Institute last fall feterita grown at 5,300 feet in Colorado was shown. This matured in spite of a midsummer drouth of several weeks.

Make the farm loan include Ideal Heating

The banker knows that radiator heating is an asset

A loan made for improvements which includes radiator heating is much easier to make because the investment in an IDEAL Boiler and AMERICAN Radiators makes the property so much more valuable and adds immensely to the happiness and permanency of the family on the farm. Young and old benefit by it. It is a large dividend-paying investment and soon repays the first cost in a few years. Radiator heating makes any old property modern, healthful, economical and in the "A" class for selling or renting.

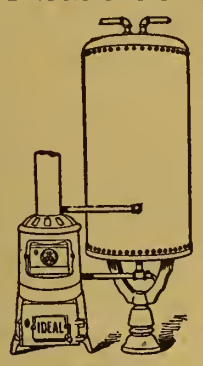
Farm success depends upon home comfort

AMERICAN RADIATORS & IDEAL BOILERS

The women folks ought to have a portion of the improvement money spent for their comfort. The success of the farm depends upon the health of your wife and the comfort and convenience of your home. You and your family must be comfortable during the long winter season and the raw, chilly Fall and Spring.

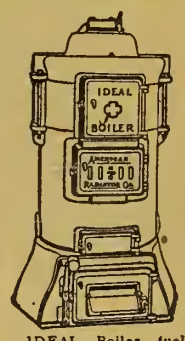
Basement or water pressure not necessary—don't wait!

IDEAL Boiler is set in cellar, side-room or "lean-to;" and same water is used for years. Put an IDEAL Boiler and AMERICAN Radiators in your house this year. Call up the nearest heating contractor and ask him to give you an estimate. Spend part of the Bank loan for this permanent, economical, dividend-paying heating outfit. Thousands of farmers say it's the "best in the world."



Our IDEAL Hot Water Supply Boilers will supply plenty of warm water for home and stock at small cost of few dollars for fuel for season.

A No. 4-22-W IDEAL Boiler and 420 ft. of 38-in AMERICAN Radiators, costing the owner $280, were used to heat this farm house. At this price the goods can be bought of any reputable, competent Fitter. This did not include cost of labor, pipe, valves, freight, etc., which vary according to climatic and other conditions.



IDEAL Boiler fuel pots mix the air and coal gases as in a modern gas mantle, extracting ALL the heat from the fuel.

Send today for this valuable book (free)

Our large 48 page book "Ideal Heating" is full of illustrations —will give you much valuable information on the subject of farm house heating. Read it through before buying any kind of a heating outfit.

Sold by all dealers. No exclusive agents.

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HONORBILT

37 DIFFERENT STYLES

With the County Agriculturist

ITEMS OF INTEREST FROM THE FIRING LINE

Introducing another of Colorado's Four Famous Farm Smiths. This is George R., who guides agriculture into proper channels in Adams county, who works hard from habit, having learned to labor thru necessity and who enjoys life, even tho he is a bachelor—Still George R. grew up in New York state, mostly on a farm. He attended high school at Manlius, N. Y., then he came to Colorado and took a course in stenography and typewriting at the Modern Business College in Denver. For two years he followed that line of work, which gave him, as a foundation, some excellent business training.

Business did not appeal to him. He had a thirst for knowledge and that knack for hard work. So he went to Fort Collins, enrolling as a student at the Agricultural college. Besides the knack and the thirst just mentioned he had little else, consequently he worked his way thru school, completing the full four-year course in three and one-half years and earning

George R. Smith

his living at the same time. He specialized in horticulture and entomology.

Calls for industrious Aggie graduates are insistent, so George R. did not have to wait for his first job. In February, 1912, he went to Mesa county as assistant horticultural inspector. From that work he went to Utah, for the United States Bureau of Entomology for investigation of the alfalfa weevil. On January 1st, 1913, he resigned from that position to accept an offer from the Department of Agriculture of the Argentine government, where he remained over two years in charge of investigations of insect pests. He wroe a thirty-page bulletin in Spanish for the Argentine government on insect pest control, thousands of copies of which were distributed.

On his return to the United States Mr. Smith took a civil service examination for a position in the U. S. Bureau of Entomology, which he passed successfully. The position was offered him, but at the same time he was tendered the place as county agent in Adams county, which he decided to accept. His experience in business and, subsequently, his service as an agricultural scientist, peculiarly fit him for the varied duties and responsibilities of agriculturist in a county that has both irrigation and dry land farming with a wide variety of agricultural practice. He has made good from the start.

Each of the Wyoming counties employing agriculturists now have from three to half a dozen or more National Farm Loan associations formed under the direction of the agents. Similarly effective work is being done by the county agents of other mountain states, wherever there is a demand for farm loans.

Under the direction of County Agent R. E. Reynolds of Laramie county, Wyoming, assisted by R. M. Lamont, secretary of the Cheyenne Industrial club and W. L. Quayle, director of state farms, a successful two day's short course in agriculture and home economics was held at Cheyenne recently. An exhibition of agricultural and home products was held in connection with the lecture course. Attendance and interest was very good.

The poultry department of the New Mexico College of Agriculture is putting out two settings of white leghorn eggs from pure-bred hens to each of five farmers in Eddy county, thru County Agriculturist Knorr. They are given only to farmers having flocks of mongrels, the purpose being to breed up such flocks from the chicks hatched this spring.

The Torrens System

To Western Farm Life: I believe the present time, when so many federal farm loan associations are being perfected, would be a good time to say a few words on the Torrens system of registration of land titles, which since 1903 has been a law in Colorado, but owing to the detrimental effect upon certain business it has been pretty well under cover and very few have had an opportunity to learn of its application. The Federal Farm Loan Board suggests all "locals" use the system as far as possible in states where this system is a law. I hope, for the benefit of those who are not well informed on the system when put to practical use, you will permit me space to give an outline of the system as I understand it.

The name "Torrens" is in honor of the founder, Robert Torrens, a native of Ireland who emigrated to Australia in 1850 and there held many high official positions, one of them collector of customs. It seems it was during his term as customs collector that he conceived the idea of applying the principles applicable to the transfer of ships to the transfer of lands, and in 1858 Australia adopted the system then and ever since known by his name.

This system has since been adopted by New Zealand, Queensland, New South Wales, Victoria, British Columbia, Manitoba and some counties in England and Ireland, Hawaiian Islands and Philippines; also in nine states of the Union, including Colorado. The object of this system is to secure by some proceeding a title which shall be impregnable against attack and when such is once obtained to provide that all subsequent transfers, incumbrances or proceedings affecting the title shall be noted on the certificate, or so that on the one page of the certificate may be seen at a glance the exact condition of the title, regardless of its past history.

Instead of the owner holding his deed for the land, he holds the certificate, issued under the seal of the court, that he is the owner of the land, subject to whatever incumbrance there may be against it, all of which must be noted thereon. A duplicate of this certificate is entered in a book in the registrar's office with all the memorials of incumbrance, etc., entered thereon. If the land is sold, he executes a deed to the purchaser, delivers same and the certificate to the purchaser, who takes both to the registrar of titles, who files the deed in his office, cancels the certificate and issues a new one to the new owner; or the registrar may note the execution and filing of the deed and the transfer of title upon the old certificate, returning it to the purchaser.

Illinois was the first state to adopt this system, in 1895 after a careful investigation by the State Bar association and the Chicago Real Estate board. The first certificate under this new law and the first valid certificate of registered title issued in the United States was signed by the registrar of titles in Cook county, Illinois, Feb. 10, 1896. In 1897 California passed an act permitting the registering of titles under this law; 1898, Massachusetts; 1901, Minnesota and Oregon fell in line; in 1903 Colorado, in 1907 Washington, and in 1908 New York, and other states since.

In each of the first six states adopting the Torrens system, it was promptly assailed in the courts and fought on every possible point; not because it is a bad law for the land owner, but it hurts some people's business. Its very purpose combats the business of the abstractor and examiner of titles, for a title once registered, theoretically need never again be abstracted or examined by a lawyer. So the title men thruout the land, including the state and national associations of title men, as well as nearly all title men individually, fought the whole system from the beginning.

In former days when our population was smaller and transfers few, it apparently satisfied the popular demand, but there is a constant increase in the mass of records of deeds and of proceedings affecting titles to lands, which makes the work of examination a constantly growing burden. Under the Torrens system an official examination of title is substituted for an unofficial one and the result, when once sufficiently ascertained, is given effect in favor of the owner and his title is made absolute against all the world. Under the present system we have needless expense from repeated examinations and loss from delays. The delays involved in an examination of title often prevent a farmer from obtaining a needed advance to meet a sudden stringency.

ROY MARPLE.
Secretary, Cope National Farm Loan Association, Cope, Colo.

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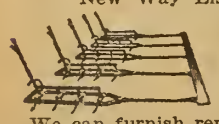


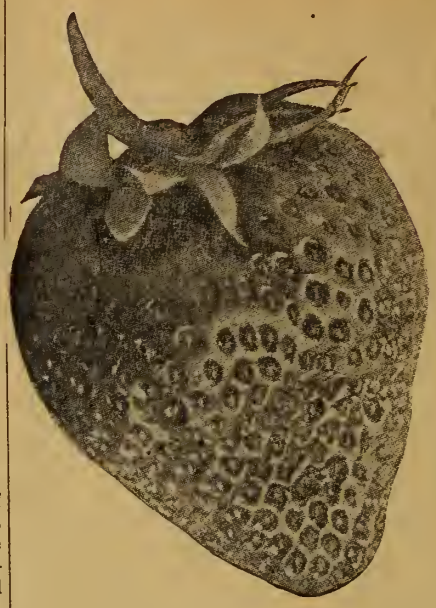
3 Section $12.00
5 Section $20.00

Prices on Harrows good for only ten days.

We can furnish repairs for St. Joe Implements, and anything you want at factory prices. Station A.

SWANSON PLOW COMPANY
ST. JOSEPH, MISSOURI

Everbearing Strawberry Plants



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Everbearing Strawberries are the one fruit crop for the dry farmer. They are a big money-maker for the irrigation farmer who wants to put in an acreage. The Rocky Mountain States are their home. No other fruit crop can hope to equal them. No other is so dependable. No other surpasses them for the Western farmer.

You cannot afford to be without a patch of this wonderful fruit on your place. You have a plot of ground in your garden, orchard, or near the house that will make you an ideal strawberry patch. Everbearers are almost as hardy as wild shrubs, just as easy to set out and get started as cabbage, tomatoes or any other garden plant. Everbearers bear the first season and with a little care at first to get them started they will continue to grow and bear fruit year after year. A single bed (7½ feet wide by 1 rod long) should yield about 50 pints. A double bed (1 rod square) about 150 pints.

We want to see every subscriber of WESTERN FARM LIFE have a strawberry patch this year. We will furnish the plants for almost the asking. in connection with your subscription to WESTERN FARM LIFE. A one year's subscription will get you 18 Everbearing Strawberry Plants, enough to plant a single bed. A three-year subscription, 48 plants, enough to start a double bed. A five-year subscription, 120 plants, enough for a big plot three rods square.

EXTRA—We have a limited number of strawberry plants of a $1,000 variety. While they last, one plant will be included with a three-year order and two with a five-year order.

Send No Money Simply fill out and mail the coupon below. DO THIS TODAY—our free plants are going fast and you may be disappointed if you wait. Immediately upon receipt of coupon from you, plants will be shipped with full instructions as to planting and care.

COUPON

Western Farm Life, Denver, Colo.

I would like to try some of your **Everbearing Strawberries this** spring. Put me down for the number of plants and subscription extension I have checked below. You are to send me statement for my subscription to Western Farm Life as I have checked. I will remit for subscription within one week after receipt of plants.

[ ] **OFFER NO. 1**—Send me Everbearing Strawberry plants for single bed (18 plants) and extend my subscription for one year.

[ ] **OFFER NO. 2**—Send me Everbearing Strawberry plants for double bed (48 plants) and (1) $1000 variety plant, and extend my subscription for three years.

[ ] **SPECIAL "120-PLANT" OFFER—Send me Everbearing** Strawberry plants for large plot (120 plants) and (2) $1000 variety plants, and extend my subscription for five years.

The plants are to be delivered in good condition, ready to plant. They are to cost me nothing, and I am to pay only the regular subscription price for Western Farm Life.

Subscription Rates:
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3 years..... 2.50
5 years..... 5.00

Name .....
P. O.....State .....
R. F. D.....Box.....

We prepay transportation only on 120 plants. Those who ordered plants prior to our Special Offer will receive extra one of the $1,000 variety plants with their 3-year and two with their 5-year subscriptions.

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Make the NEW and Clean the OLD with the MARTIN Ditcher, Dyker and Grader. Makes or cleans irrigation or drain dit-hes up to 4 feet deep—any width. Makes two to three foot dyke or levee; grades roads. Works in sand, rocks, gumbo or clay—wet or dry—on side hills or level ground.

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ONE OF A THOUSAND
"We have made several miles of ditch and some side hill road with our MARTIN. It has paid for itself at least 3 times during this season." A. L. CAMPBELL, Lysite, Wyo.

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Dairying and Hog Raising

GEO. E. MORTON

Free advice on the commercial or technical features of dairy farming and hog production. Please address your letters to DAIRY DEPARTMENT, WESTERN FARM LIFE, DENVER, COLO.

In the present emergency the production of cereals for direct human consumption is necessary, but care should be taken not to break up too much alfalfa ground in the attempt to increase the cereal production. Otherwise we will face another shortage of forage next winter, with a second season of severe livestock losses.

In dry land sections the acreage of forage crops should be increased to the limit. Increase in these sections will not curtail cereal production, as spring grains without irrigation are merely a gamble which is not justifiable under present conditions.

In order to care for the forage crops in case of drouth and to make the fullest possible utilization of them if they come to maturity, pit silos should be built by every farmer in the arid section. The pit silo in a great many soils can be built simply by digging a hole in the ground. For permanency this should be lined with a two-inch concrete wall, but under the stress of circumstances this could be delayed a season if the pit is not sunk too deep.

In these sections cows should be milked wherever possible, raising the calves on the skim milk, rather than allowing them to suckle their mothers. The net amount of human food gotten by the production of butter fat and the growing of calves on skim milk is far greater than where the calves are grown on whole milk.

Dairymen should not veal calves from large bodied cows. Anything of large enough frame that will make beef, even tho it is dairy bred, should go into the hands of men in the country with cheaper feedstuffs who can raise these calves to maturity for beef. Veal at best is a wasteful meat, very watery and lacking in nutrition. Every householder and butcher should discourage its use.

The most encouraging phase of the meat situation is the sharp demand for brood sows. This demand indicates a strong production of pork which is one of the most economical of meats, as swine dress out a higher percentage as meat than any other class of animal. The chief trouble with pork for country districts is that it is not suited for fresh meat use during summer, as it is difficult to keep without ice.

The fresh meat problem in the country can be solved with an increase in poultry; by keeping a few ewes on the farm which will make their way at almost no cost by grazing ditch banks, orchards and dooryards; and by the formation of several families into beef circles, each family killing a beef animal in their turn and providing a carcass for distribution.

The available breeding stock in all classes should be increased by saving young females. Save the heifer calf crop. Saving the steer calf crop will give a marked increase in the available amount of beef in less than two years.

Breeding ewe lambs so as to drop lambs at year old, and breeding sow pigs to farrow at ten months to a year will bring a material increase in the meat supply in a year's time. While this ordinarily is not good practice, we can afford, under the stress of present conditions, to put up with the smaller resulting size in the female for the sake of a sharply increased production of meat in the next two years.

With green alfalfa coming on, immature pigs should no longer be sent to market, as they can be turned on alfalfa and come out at a much heavier weight in the fall with a very slight use of grain.—G. E. M.

Milking Methods

A subscriber at Deer Trail, Colo., gives the following as his method of hand milking: "Since the majority of farmers do not have enough cows to pay them to buy a milking machine, I thot I would pass my experience along. When I was a boy I learned to milk a cow by doubling my thumb into the palm of my hand, then squeezing the teat between my thumb and cushion of my first two fingers. It is less tiresome to milk this way and the cows will stand better. The old way of pressing the finger tips into the teat, or grasping around them with the whole hand and trying to pull the teat off, is not gratifying to the cow and it is no wonder they strike back. This is a speedy way to milk and one is not bothered with short teats and sore fingers. Teach your boys to milk the correct way."

Answer: The only method of hand milking which is approved by the best dairies over the country, is the squeeze method without stripping. Very few commercial dairies would employ a man who turns his thumb in in milking by the squeeze method. It is generally believed that it irritates the tissue of the teats, resulting in a stricture or what is known as a bean in the teat. A man who milks by the regular squeeze method with the thumb, leaving the fingers on the outside, and will milk dry handed, will milk more cows with less disturbance from them, and fewer injured teats, than by any other method.

Pumpkins Versus Grain

Will you please give the comparative feeding value of squash and pumpkins to cows giving milk, and also to horses as compared to bran or corn meal?—L. S. C., Greeley, Colo.

Answer. It is difficult to compare the feeding value of squash and pumpkin with that of bran or corn meal. They have, however, about one-tenth of the dry matter contained in grain feed. It is usually estimated that two and one-half tons of squash and pumpkin will equal a ton of silage, while it takes about three tons of silage to equal one of hay. It probably will take something like seven tons of squash and pumpkin to equal a ton of hay.

CUTTER'S
BLACKLEG PILLS
"California's Favorite" for nearly 20 years
For the Prevention of Blackleg in calves and young cattle

Their superiority is due to nearly 20 years of specializing in "Vaccines and Serums only."
Year in and Year Out they give better satisfaction than any other vaccine made, and the cost of a few cents per dose is cheap insurance against a disease that always takes the fattest and best.
Single Pills may be used for ordinary and range stock.
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Use any Injector, but Cutter's simplest and strongest.
Prices:
10 dose pkge. Single pills $1.00
50 dose pkge. Single pills 4.00
10 dose pkge. Double Pills 1.50
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Cutter's Pill Injector.... 1.50
Insist on Cutter's. If unobtainable, order direct.
Write for new booklet, "The Control of Blackleg." It tells about Anti-Blackleg Serum which cures Blackleg and may be used simultaneously with vaccine to combat outbreaks and safely protect valuable stock.
The Cutter Laboratory, Berkeley, Calif.
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Eastern Agent

"This is for you, girls!

It's the most wonderful separator I ever saw. I just brought it from Johnson's Hardware Store where they were demonstrating it. You can't guess what it will do."

"I think I know, father. You told me last week about the loss of cream in our old separator when I turned it too slow. You timed me and pretty near scolded me when you found I was turning 37 revolutions instead of 50. This is the separator that "skims clean at any speed". It's a

SHARPLES
SUCTION-FEED
CREAM SEPARATOR

"Mary is a smart girl, mother—she guessed it. We all helped to test it and it skimmed *to a trace* when turned as slow as 36 and equally clean when turned as fast as 55 turns. It simply skimmed *faster* when we turned it faster. And the cream remained at 35% thruout the varying speeds."

"Why, father—then we will know exactly what the cream check will be each week, wont we?"

"Indeed we will, mother. Now look at the bowl. It's a plain straight *tube* with a small ring like a napkin ring in it.

"Goody!—I'll get thru washing up in a jiffy, no discs!"

"Yes, girls, and note the knee-low supply tank, and the automatic once-a-month oiling—it has any other separator I ever tried, beat a mile. But then—it's made by the oldest and largest Separator Works in America."

Sharples Separator Co. - West Chester, Pa.
Ask for Catalog "Velvet for Dairymen."—addressing Dept. 30.
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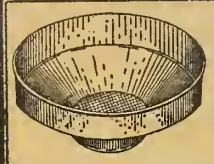
Promote Dairy Industry

The directors of the Colorado Dairymen's association met in Denver recently for organization and starting a program which would promote dairy interests. The Dairymens' association has been in existence in Colorado for a long time, and has been the one association which has taken the problems of the dairyman to heart and tried to solve them. It is composed of men from every phase of the dairy industry, in the same way that the National Dairy Council has been built up. Between annual meetings, the direction of the work of the association is in the hands of a board of directors of nine members, representing the various phases of the industry. The present directors are: Mr. A. M. McClenahan, a breeder of Jerseys at Greeley; W. A. Groom, a dairyman and breeder or Jerseys at Boulder; W. S. Partridge, manager of the Arkansas Valley Land and Irrigation company, who has been instrumental in building up a large dairy interest around Holly, Colorado, from where the product is sent to the Lamar condensary; George T. Sinton, a dairyman of Colorado Springs; Gilbert Landell, manager of the Fort Lupton and Johnstown condensaries; Senator Agnes L. Riddle, former secretary of the State Grange, who has a dairy near Sullivan, Colorado, and is a member of the state board of agriculture; Mr. Carlos W. Hall, who has a dairy farm and a retail dairy in Denver; Mr. Roud McCann, deputy state dairy commissioner; and G. E. Mortin, editor of this department.

The board elected Mr. C. W. Hall, president; Mrs. Riddle, vice president; Mr. McCann, secretary and treasurer. It was decided to hold the next annual meeting of the state association in January at Fort Collins in connection with the Colorado Farm Congress. Every dairyman should keep this date in mind and plan ahead of time to be at the annual meeting next year. The directors felt that in a number of sections of the state, the dairy industry was well enough forward so that no development work should be done in connection with it; but rather, that those communities that were in special need of help should be aided in whatever problems they have, whether it be a problem of better cows, or better markets, higher production, or a change from summer dairying to winter dairying; aid should be given them by the state association. With this in view, it was decided to hold at least one semi-annual meeting in the southern part of the state, and also to foster "dairy days" in two or three localities, where the dairy interest is sufficient to warrant a small dairy show and dairy day. The dairymen of the state should get behind their Dairymen's association, affiliate with the National Dairy Council, and back up the new effort at publicity for dairy products which has resulted during the past year in securing a somewhat better price for milk and butterfat.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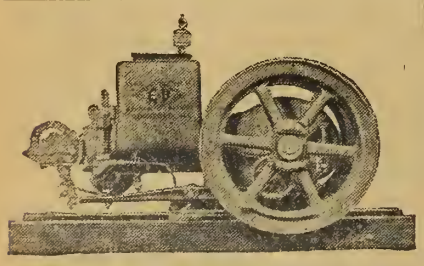

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Name _____
Address _____

Cold Silage

H. C. M. has had some trouble with his corn silage this winter. He has a pit silo 25 feet deep. Last winter he says the silage came out in fine shape, but this winter he found it very cold. It did not freeze but it was not in the condition of warmth that good silage should be in, especially when taken from a pit silo. He says the walls are from two to five inches thick in the pit silos in his neighborhood, but that other farmers have had the same experience with cold silage, while the silage fed on his uncle's place out of a stave silo has been in normal condition. Perhaps his silage was not packed well, but he insists that it was better packed than last season.

Answer: It is not necessary that the silage should be warm at the time it is taken out of the silo; in fact the normal period of feeding in the silo is about three to four weeks. As long as the silage does not freeze you may be satisfied. If the silage heats up a second time there is a loss of constituents, and it is apt to spoil. This is the reason one has to take off more silage in the summer than iu the winter, because otherwise the air gets in and causes trouble; also in some types of silo which draw heat in the summer time a second heating or fermentation starts and silage foams. The silage that comes out of the silo cold is perfectly good feed and I do not think our correspondent needs to worry about it.

Relative Feeding Values

Please advise relative feeding values of the following feeds at the prices quoted: Bran is $2 per cwt., beet pulp $1.50, beet tops $1.50, alfalfa (baled) from $22 to $24 per ton, and alfalfa meal $1.50 per cwt. I have corn ensilage and desire to know the cheapest milk feed when fed in conjunction with it.—J. E. M., El Paso County, Colo.

Answer: You should feed about forty pounds of corn silage a day and what alfalfa hay the cows will clean up with about six pounds of corn and bran, mixed half and half.

"Si Hubbard told me that he got a heap of work out of you when you was workin' for him," said the farmer.

"Well, I allow he did," said the hired man.

"We All Used To Leave The Fields—"

"One man and the EMPIRE do the work of three men," says Mr. A. W. Clayton, Madison, Wis. That permits the other **two** men to go right on with their work—or perhaps saves their salaries entirely.

EMPIRE MILKING MACHINES

will make **your** dairy more profitable and eliminate the drudgery from dairying. With an EMPIRE the milking is an incident—not an ordeal.

The best recommendations for Empire Milkers that we have seen have come from users. They will interest you. Send for our illustrated pamphlet "What Dairymen Say."

Better—purer milk and more of it are results of EMPIRE Milking.

EMPIRE Milking Machines are simple and efficient—gentle and natural in their action, and above all, they milk the **SAME WAY EVERY DAY,**—more uniform in action than even the calf. They safeguard the condition of valuable cows.

Let us tell you **ALL** the benefits they offer you. Write for Catalog 28—and also ask for information regarding EMPIRE Cream Separators, Gasoline Engines and Electric Plants.

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on This Easy Self-Earning Plan

You won't feel the cost at all. The machine itself will save its own cost and more before you pay. We ship any size separator you need direct from our factory and give you a whole year to pay our low price of only $24 and up. Read what Alfred Geatches, No. Jackson, O., says: "We are getting more than twice the cream we were before. The separator is very easy to clean and runs very easy." Why not get a lifetime guaranteed New Butterfly separator for your farm and let it earn its own cost by what it saves?

(31) NEW BUTTERFLY $24 and up

Cream Separators have these exclusive high grade features—frictionless pivot ball bearings bathed in oil, self-draining bowl, self-draining milk tank, easy cleaning one piece aluminum skimming device, closed drip proof bottom, light running cut steel gears, oil bathed. Guaranteed highest skimming efficiency and durability. We give

30 Days FREE Trial — Lifetime Guarantee

against all defects in material and workmanship. We ship you the size machine you need, let you use it for 30 days. Then if pleased you can make the rest of the small monthly payments out of the extra cream profits the separator saves and makes for you. If you are not pleased just ship the machine back at our expense and we will refund what you paid. You take no risk. Write for FREE Catalog now.

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in Iowa has **daughters that are producing over 130% more butter fat and milk than their scrub dams.**

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TOWER'S FISH BRAND
the FISH BRAND REFLEX SLICKER
(PATENTED) $3.50
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Dealers everywhere
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Home of the Gold Seal Seeds "From the top of the World."

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Mail your order for the famous H-L-F Silo before lumber prices go higher. Now shipping direct from mill at carload, wholesale prices.
Frost Proof—Costs Less
Patented double-wall construction prevents freezing in coldest climates. And we sell you a genuine double-walled silo *building* for less than ordinary stave silos cost. Write quick for FREE ROOF OFFER.
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Big Money in Running Water
Let us start you in a business that will make you from $15 to $50 a day when farm work is slack. Other men have done it for years with an
Improved Powers Combined Well Boring and Drilling Machine
One Man One Team
Same rig bores through any soil at rate of 100 ft. in 10 hours, and drills through rock. One team hauls and operates machine. Engine power if wanted. Easy to operate—no experts needed.
Small investment; easy terms. Make machine pay for itself in a few weeks work.
There is a big demand for wells to water stock and for irrigation.
Write for free illustrated circulars showing different styles.
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FACTORY-TO-RIDER
SAVES YOU MONEY
Buy direct and save $10 to $20 on a bicycle. RANGER BICYCLES now come in 44 styles, colors and sizes. Greatly improved; prices reduced. Other reliable models $14.75 up. WE DELIVER FREE to you *on approval* and *30 days trial* and riding test.
Our big FREE catalog shows everything new in bicycles and sundries. Write for it.
TIRES, lamps, wheels, parts and supplies at *half usual prices.*
Do not buy a bicycle, tires, or sundries until you get our *wonderful new offers*, low prices and liberal terms. A postal brings everything.
Ranger Electric Lighted Motorbike
MEAD CYCLE COMPANY Dept. S-304 Chicago

$15.00 Sweep Feed Grinder. | $19.00 Galvanized Steel Wind Mill.
We manufacture all sizes and styles. It will pay you to investigate. Write for catalog and price list.
CURRIE WIND MILL CO.
Seventh St., Topeka, Kansas

Pork on Irrigated Land

Because of the relatively small capital and short time required to get a start in the swine industry and because of the high efficiency of hogs in utilizing certain field crops, swine production is a specially promising industry for irrigation farmers. In order to secure information regarding methods of utilizing hogs in the disposal of certain field crops produced on irrigated lands, experiments were conducted at the Scottsbluff Experiment Farm on the North Platte reclamation project in 1912, 1913, 1914 and 1915.

In three years' experiments, including eight lots of hogs, in which alfalfa pasture was supplemented with a 2 per cent ration of corn, an average gain of 3,181 pounds per season was made from an acre of alfalfa pasture and 7,844 pounds of corn. It required an average of 2.47 pounds of corn, in addition to alfalfa pasture, to produce one pound of pork. If the gains are valued at 7 cents a pound and corn at 60 cents a bushel, or $1.07 a hundredweight, the average annual return was $138.75 per acre of alfalfa pasture. If the corn fed is valued at 60 cents a bushel and the alfalfa pasture at $15 an acre, the average cost of 100 pounds of gain was $3.11. If the average yield of the alfalfa plats in the same field is assumed to represent the yield of the pashtured plats the hogs paid an equivalent of $25.13 per ton of hay.

In two years' experiments with alfalfa pasture, with and without supplemental feed, an average annual return of $45.08 per acre was secured where no supplement was used, as compared with $70.20 where a 1 per cent ration of corn was used—$128.49 from a 2 per cent ration of corn—$121.96 from a 2 per cent ration of barley, and $168.25 from a 3 per cent ration of corn. The rate of gain and the carrying capacity of the pasture increased with the quantity of grain fed. Ground barley appeared to be as good, pound for pound, as shelled corn as a feed for hogs on alfalfa pasture.

Sows and pigs on alfalfa pasture, with a 2 per cent ration of grain, made an average gain of 1,574 pounds per acre of alfalfa pasture from May 1 to July 1, or a net return of $66.84 per acre. When corn was used the return varied from $54.11 to $69.97 per acre, and when barley was used the return was $77.76 per acre.

In three years' experiments, hogging corn without supplementary feed produced an average of 896 pounds of gain, worth $65.72 per acre, or $1.50 per hundredweight of the estimated yield of corn.

In two years' experiments, hogging corn without supplementary feed produced an average of 7 4 pounds of gain worth $72.03, where the hogs were fed tankage in addition to the corn. Where no supplementary feed was used the hogs paid $1.34 per hundredweight for the estimated yield of corn, as compared with $1.55 per hundredweight where the hogs had access to alfalfa pasture and $1.50 per hundredweight where tankage was used. The use of either alfalfa or tankage resulted in more rapid and cheaper gains than were secured where no supplementary feed was used.—Bulletin 488, U. S. Department of Agriculture.

Cow Acts Crazy

I would like to know what is the matter with one of my purebred Shorthorn cows. She acts insane, turns around and around on the same place. We get water out of a creek and when she hears the roaring of the water she turns around the hole and sometimes she even gets her feet in the hole and yet she cannot find the water. When we want to drive her she always goes in the wrong direction. Her appetite is good, but she is thin. We feed timothy hay.

Have also lost several calves during the winter. The navel string came off too short, inflammation set in and there would be a discharge of pus. In a few days the calves died.—L. B., Steamboat Springs, Colo.

1. Your cow is probably affected with some disease of the brain and I would advise that she be kept in a stable or corral where she can have access to both food and water and be fattened if possible for beef.

2. The cause of death aomng your calves is not due to the cord breaking off too short, but due to an infection that gains entrance thru the navel. I would advise that as soon as the calf is born the navel be thoroughly cleaned and disinfected and painted with tincture of iodine.

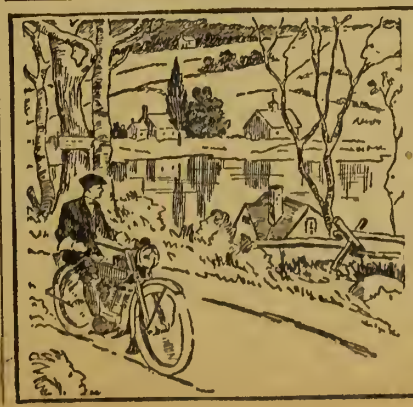
Read the advertisements. They contain valuable information. When you write to advertisers be sure to mention Western Farm Life.

In writing to advertisers be sure to mention WESTERN FARM LIFE.

COW OWNERS
EXPECT MORE FROM A
DE LAVAL
—more cream
—longer wear
—better service
—better value,
AND THEY GET IT
A catalog of the NEW De Laval Machines will be gladly sent on request, and if you don't know your nearest local agent please simply address the nearest De Laval main office as below.
THE DE LAVAL SEPARATOR CO.
165 Broadway, New York 29 E. Madison St., Chicago
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

Try 100 POUNDS A AND C CALF MEAL

Test It Thirty Days to Prove Our Claims
Let us prove that you can sell your milk for three or four times as much as Calf Meal costs, and turn your calf loss into a profit. Order 100 pounds through your dealer or direct. Use it 30 days. **If you are not satisfied that it does what we claim, return unused portion and your money will be refunded.** It costs less to feed than any other standard meal or home mixture. Contains all nutriment necessary to keep the calf in good condition. Promotes healthy growth of meat and bone. A little added to poultry mash will make chicks grow quicker and hens lay better. Call on your dealer or write today. Sample sent on request.
ADY & CROWE MERCANTILE CO.
1900 Fifteenth St. Denver, Colorado.


$310 Harley-Davidson Motorcycle
FIRST GRAND PRIZE
In the picture are hidden a number of faces. How many can you find? Some are looking right at you, others show only the side of the face—you'll find them upside down and every way. Mark each face you find with a pencil, clip out picture, send to us with name and address NOW. We will give away a $310 1917 Model Harley-Davidson Motorcycle, as First Grand Prize, and Thousands of Dollars in Cash Rewards, Prizes and Special Premiums. There will be no losers. Solve the puzzle. If you can find as many as FIVE FACES we will send you immediately
1000 Free Votes toward the $310.00 Motorcycle and other Grand Prizes. We will also give away twelve 1917 model Coaster Brake $40.00 Bicycles. These will be given free and extra, regardless of who gets the motorcycle. Someone will win motorcycle. WHY NOT YOU?
FARM LIFE, Box DF5 SPENCER, IND.

The Farm Home

MRS. H. T. FRENCH

Questions about home problems promptly answered by letter and thru the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

MAY

Merry, rollicking, frolicking May,
Into the woods came skipping one day;
She teased the brook till he laughed outright,
And gurgled and scolded with all his might;
She chirped to the birds and bade them sing
A chorus of welcome to Lady Spring.

And the bees and butterflies she set
To waken the flowers that were sleeping yet,
And shook the trees till the buds looked out
To see what the trouble was all about,
And nothing in nature escaped that day
The touch of the life-giving, bright young May.

McDonald.

Welcome, month of May. Winter, tho it may return now and then in colder nights and visiting winds, no longer affects us to the extent of injury, and tho the wind may blacken the poplar flowers, stir up the dust and try our tempers, Spring, in defiance of all hindrances, pursues its own way steadily, resolutely and with success.

Nowhere is this more beautifully shown than in the vegetation of seeds bequeathed to the soil the previous autumn and after lying in the earth, apparently dead for many months, now assert their intense vitality and lift their green blades into the air.

A seed is one of the most wonderful things in the world, containing not only the first principles of the plant, but holding the power to lie, as it were, asleep until the fitting period for the expansion of the germ and meanwhile survive influences of destruction such as totally destroy objects that have no life in them.

Economic Needs of Farm Women

As the one cry of the nation is PLANT, PLANT, PLANT, so the great and persistent call to us farm women is PLAN, PLAN, PLAN, that we may conserve the life of our nation by learning to FEED OUR OWN FAMILY FIRST AND WELL.

Before we country folk become alarmed over the fact that we are facing a crisis and must face the food problem, let us calmly consider our opportunities and take careful stock of the great possibilities that lie before us. We believe with others of our state and nation that the man or woman with the hoe or breadmixer may be as truly patriotic as the man with the gun or the woman with the Red Cross uniform on.

If we have in our days of prosperity become a wasteful people, let us prove our willingness to remedy the cause of this accusation. From the Secretary of Agriculture of the United States in one of the recently published Food Thrift Series, we quote the following for careful consideration:

"The food waste in the household, the experts assert, results in large measure from bad preparation and bad cooking, from improper care and handling, and, in well-to-do families, from serving an undue number of courses and an over-abundant supply and failing to save and utilize the food not consumed.

"As an instance of improper handling it is discovered that in the preparation of potatoes 20 per cent of the edible portion in many cases is discarded."

INVOCATION FOR PLANTING

Spirit of the seed,
Bless the hand that sows,
And when you are freed
Rise a rose!
To another birth waken now and smile,
Grace our bit of earth
A brief while.
In your little happy life we may know
God's joy when he watched the first flower grow.
Child of changing forms, shall I pass like you,
Into something strange, beautiful and new?

Pauline Florence Brower.

THE COMMON RHUBARB

Welcome and wholesome is this most valuable article of food, coming after the heavy diet of winter when acids are a stimulant to the appetite and an aid to digestion. Do not peel off the skin of the stalks when preparing for cooking, as this is the best part of the rhubarb and the pink stalks of this plant add to the attractiveness of the sauce. The skin melts into jelly in the process of cooking and the richness of color and flavor are esteemed by many thrifty housewives (who count the cost) a luxury. Prepare for cooking by simply washing the stalks and cutting them into half-inch or quarter-inch pieces.

Compote of Rhubarb

Cut in half-inch lengths the stalks of the brightest red rhubarb you can get, and put into a porcelain or aluminum saucepan. To every quart of rhubarb add a cupful of cold water. Cover the dish closely and let cook slowly for nearly one hour, when the red juice will nearly cover the rhubarb.

Move to a part of the stove where it will cook faster and when perfectly done, add a cupful and a half of sugar to a quart of stalks. Let it boil about fifteen minutes longer when a rich, red compote, a very fine dish for breakfast, is the result.

Rhubarb Pie

Line a deep tin with good plain pastry. Fill the crust with slices (one-fourth-inch thick). Mix one cup of sugar with four tablespoons of flour and a pinch of salt in flour sifter. Sift into pie and add flakes of butter over top of all. Cover with rich pie crust and bake slowly about thirty-five minutes.

Rhubarb Shortcake

Make dough as for baking powder biscuit. Bake in thin, good sized biscuits or individual shortcakes. Use compote for filling and for top. Serve with whipped cream.

FOR SPRING AND EARLY SUMMER

Breakfast

1. Stewed prunes; cereal; hot muffins; coffee.
2. Rhubarb sauce; bacon and eggs; bread and butter; coffee.
3. Oranges; cereal with cream; toast; coffee.

Dinner

1. Baked ham; catsup; creamed cabbage, potatoes; bread; boiled rice; maple syrup.
2. Chicken on biscuits; mashed potatoes; pickles or jelly; creamed onions; lemon pie.
3. Creamed chipped beef on toast; browned potatoes; lettuce, celery and nut salad; bread and butter; prune whip.

Note.—For creamed chipped beef, use very thin dried beef, pull into small pieces and brown in a little butter. Put it into a white sauce made of milk and flour to which the beaten yolk of an egg has been added, and season to taste.

Mrs. F. W. of Dove Creek, Colo., contributed the two following recipes:

Chocolate Drop Cookies: Two cups sugar; 1 cup butter or lard; 4 eggs; 1 teaspoon salt; 4 squares chocolate; 1 cup sweet milk; 3½ cups flour; 2 teaspoons baking powder; vanilla to suit taste. Drop on buttered tins and spread slightly and bake in moderate oven.

Genuine Baker Buns: Set in evening one pint fresh milk, butter size of egg, one pint yeast, flour to make batter. In morning add 2 eggs beaten light, ½-cup sugar, flour to make like bread.

Genuine EDISON DIAMOND DISC PHONOGRAPHS

THEY RE-CREATE Music. Thos. A. Edison's great triumph. The world's master phonograph, latest model which is now offered to you at Edison's Own Price On easy terms. A little each week or month soon makes it all yours. Free catalogs of ALL styles mailed postpaid without obligation.

DAYNES-BEEBE MUSIC CO. DEPT. E. SALT LAKE CITY, UTAH

Elastic Stockings

KNEE CAPS, ANKLETS, SUPPORTERS, ETC

Quick service, fresh goods, made to order on our own loom. Write today for measurement blanks.

The J. Durbin Surg. Supply Co. 1506 Curtis St. Denver, Colo.

LEPAGE'S GLUE HANDY BOTTLES

MEND IT TODAY 10¢

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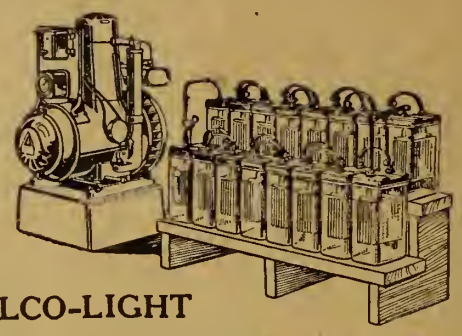
ELECTRICITY FOR EVERY FARM



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"The Best Lighted Farm in the County"

One prominent farmer says:

"Delco-Light has actually added to the value of my farm—

"The neighbors speak of it as the best lighted farm in the county—

"But it is more than that—it is the best place in which to live—and to raise a family."

Delco-Light brings city comforts and conveniences and economies to the farm.

It lights the house and barn—it furnishes power to pump the water, wash the clothes, churn the butter, separate the cream—run the vacuum cleaner and the electric fan.

It is so simple that a child can operate it and so economical that it actually pays for itself in time, labor and fuel saved.

The Domestic Engineering Company
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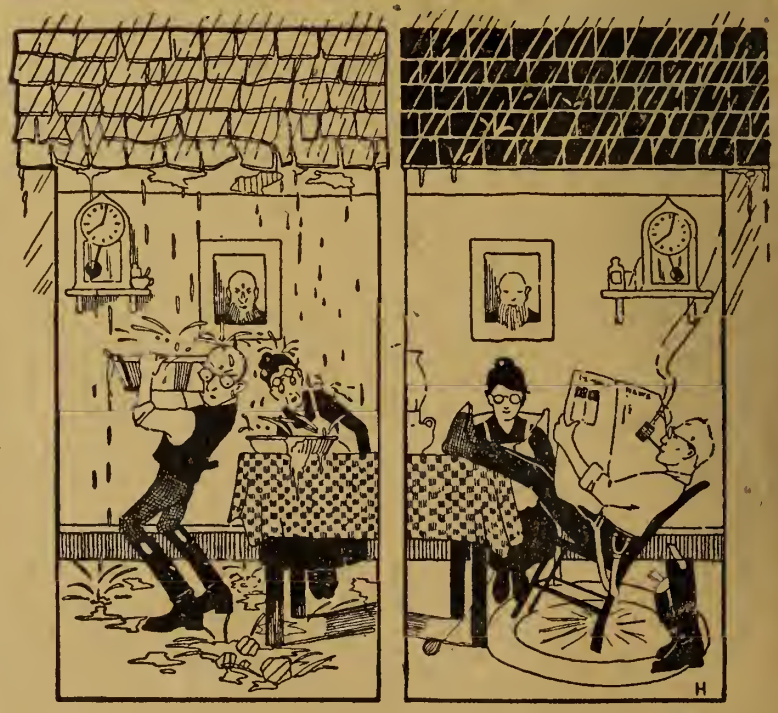

Drip or Dry, which do you prefer? It's all in the Paint on your shingles!

BITUMINOUS Waterproof Roof Paint insures you against Leaky Roofs and Heavy Repair Bills.

Crown Tar Works, Denver, operated by The Denver Gas & Electric Light Company

Let rise, when light, make into buns. Let rise 4 hours and bake 15 minutes.

TO ERADICATE STAINS

Acid—Use ammonia or chloroform.
Blood—Soak when fresh in cold water.
Chocolate—Soak in kerosene and wash in cold water.
Coffee—Treat with boiling water when fresh.
Fruit—Soak fresh stains in milk or use oxalic acid.
Grass—Rub spots with molasses and wash.
Grease—Rub French chalk or fuller's earth on spots.
Ink—Use salt and lemon juice.
Iron Rust—Use salt and lemon juice or hot solutions of oxalic acid.
Mildew—Use lemon and salt or Javelle water.
Mud—Soak in kerosene.
Paint—Use turpentine or benzine.
Perspiration—Nothing but boiling will remove.
Scorch—Wet and expose to sun.
Tar—Soak in warm milk and salt.
Tea—Use boiling water.
Wine—Put dry salt on fresh stains. Warm milk on old ones.
Mildew is obstinate and difficult to remove and if lemon and salt or Javelle water do not remove it, nothing will.

ANSWERS

What is the best preparation to use in washing windows? Housekeeper. Ans. There is nothing that we have found more satisfactory than about a tablespoonful of kerosene in two quarts of warm water. If one wishes to give them an extra fine polish, rub the window over with wood alcohol and polish with soft paper.

My rhubarb pies always persist in running over in the oven. What can I do to prevent this?—Young Wife.
Ans. Stir a teaspoonful of flour into the sugar with which you sweeten the pie. Before putting on the upper crust moisten the edge of the lower crust with water or milk and press the edges of the two crusts together firmly. These precautions will usually prevent pies from leaking.

PATTERN DEPARTMENT

All Patterns 10c each. Address WESTERN FARM LIFE, Pattern Department, 14th and Arapahoe, Denver, Colo.

1812—Smart Dress in Empire Style. Cut in sizes 2, 4, 6, and 8 years. Requires 2½ yards 36-inch material for 4-year size with ¾-yard for bolero. One could make this pretty style in pink cashmere with underwaist of soft silk or crepe, or of pretty white or blue batiste. The style is nice for flouncing, for cashmere and nun's veiling. The bolero may be finished separately or omitted.

2050—Girls' One-Piece Dress with Bloomers. Cut in sizes 2, 4, 6, 8 and 10 years. Requires 3½ yards 27-inch material for dress and 2 yards for bloomers for 6-year size. This design is good for chambray, gingham, linen, percale or lawn.

2052—An "Easy-to-make" Apron. Cut in sizes Small, Medium and Large. Requires 5¾ yards 36-inch material for medium size. But little time, material and labor will be required to make this neat and serviceable garment, which may serve as a morning work dress, as well as an apron. It is comfortable and allows freedom of movement. Gingham, lawn, seersucker, chambray, drill, linen, alpaca, brilliantine and sateen are all good apron materials. The fulness may be confined by a belt or a drawstring run through a casing. The garment may be slipped over the head or closed on the shoulders.

1690—Dainty Summer Frock. Cut in sizes 34, 36, 38, 40, 42 and 44 inches bust measure. Requires 8½ yards 44-inch material for 36-inch size. Figured organdie with Val insertion and lace is here shown. The dress is also nice for dimity, voile, lawn, crepe, embroidery, silk and crepe de chine. The Skirt is finished with a wide tuck over side and back, and has a panel over the front, with plait extension at each side seam.

Dayle Wiard and His Dog

Hello, Dayle, how do you like your picture in the paper? The editor received this some time ago from your folks and he has been trying to find a place for it, because he knows that everybody likes little boys and big dogs. So you live on a ranch near Cody, Wyoming? That's quite a ways from Denver, isn't it? Do you ever come down this way? If you do,

Dayle Wiard and His Dog

please come in to see the editor and Farmer Putnam, the funny old man that writes for our grown folks and spells so many words wrong. I guess Farmer Putnam didn't have as much schooling as you are getting, Dayle; that's why he doesn't know how to spell.

I was so glad to hear all about your papa's ranch. Six thousand feet is pretty high up, but there are lots of ranches in the mountains that are a thousand and some are two thousand feet higher than yours. It must seem funny to the boys and girls down east to read about our ranches., Why it would seem that they are way up in the clouds. And they are too, sometimes, when the clouds hang low. I think it's just fine to farm high up. Everything seems to grow so much faster, as if the plants have to hurry to keep away from early and late frosts. Our colors are brighter, our cattle and horses sleeker and fatter, and more frisky—just like our boys and our dogs! They're all so full of life, and it's no wonder, for our bright sunshine and our clear, pure mountain air makes life worth living.

I'm going to send your Grandpa McClure at Fort Collins a copy of this paper, so he can see what you look like in print. Sure, I know him. I bet he'll be tickled. Well I must close now. Let me hear from you some time again.

I wonder if some other little ranch boys and girls won't send the editor their pictures, taken with their pet dogs, or ponies, or calves, or kitties? Of course this is a grown folks' paper, but they won't care if we just take a wee bit of space once in a while for the little ones. We want to show them what the farmers and farmers' wives of the future look like today. Send on the pictures, and tell the editor something about the ranch or farm on which you live.—Editor.

Corn Silage $75 an Acre.

Over in Marshall county, Kansas, John Cottrell made 1,200 tons of silage from 120 acres of corn. He figures that this silage saved him more than $10,000 worth of hay and grain. It cost him $900 to put this crop in concrete silos, which makes his net profit $9,000, or more than $75 per acre for corn which he didn't have to husk. Farmers in irrigated sections of the mountain states can duplicate this with corn silage and those on the dry lands, while unable to get the big tonnage, nevertheless will find corn or grain sorghums an absolutely sure crop as ensilage and far more profitable than when they take chances on harvesting them as grain.

A horse is just as good as his feet, and these should be given special attention; the hoof bears the same relation to the horse that the fingernail does to man, in the matter of care, and should be kept trimmed evenly. The best instrument for this purpose is the rasp. If the hoof has a tendency to crack it should be kept oiled.

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Another Matter

Tommy was writing a long letter to his father at the front when a visitor was brought into the room by his aunt.

In his haste to clear the table, Tommy upset the ink all over the brand-new plush tablecloth. Immediately he began to sob.

"Cheer up!" said the visitor, kindly. "Remember, it's no use crying over spilt milk."

But Tommy replied amid his sobs: "Course it ain't. But when you spill milk you've just got to call the cat, and she'll lick it up for you. But this ain't milk, and mother will do the licking."

Profitable Farm Poultry

W. E. VAPLON

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries Poultry Department, Western Farm Life, Denver, Colorado.

At the present time, with eggs 35 to 40 cents a dozen in Denver, it looks as though not many eggs will be put away for winter use. The present price is nearly double the prices obtained in previous years and most of us are going slow and will depend on early pullets for winter eggs.

On account of the high price of feed, the closest kind of culling will be in order. In the past, close culling has not been the rule, and now that we are forced to learn the lesson, we may overdo it; we can afford to keep thru the molt all young hens that are now making good; such should be marked and with every vigorous pullet, be given the best possible care. An egg in the hand is worth two in the nest, so let's get eggs while the getting is good. With summer coming on so slowly hens can be made to keep up the high egg yield of the present time into late summer, by a little extra care. Forced molting does not pay; the early molting hen is the hen that should go to the butcher.

Force the young stock along; get the cockerels and less thrifty pullets to market as early as possible; you will probably find that a two-pound broiler in May and June is worth as much as a roaster weighing 4 or 5 pounds four months later. Plenty of room, clean quarters, an abundance of milk and fresh water, greens and shade, will bring the pullets into the lay a month sooner than when crowded quarters, filth and neglect prevail.

Our first batch of chicks are now five weeks old and for the first time are turned out on the ground; they have been kept on a board floor the entire time, 65 of them in a space 6x8, and have been perfectly healthy and happy. In addition to cracked corn and cracked wheat they have had four pounds of rolled oats, a little milk and fresh cut bone about three times a week. They have had practically no greens until the past ten days, as we had no suitable place for sprouting oats, and grass was slow in coming.

Lost 80 Chix

If you have any bulletins on the care and feeding and starting of incubator chix, I would like very much to get them. I have pretty good luck hatching incubator chix, but I cannot raise them. I hatched over 85 this month and before they were a week old they were all dead but four.—F. J., Sanford, Colo.

There is no good reason for losing more than ten or fifteen per cent of a hatch, but, of course, it is impossible to tell you what the trouble is, not knowing how the chicks were cared for. If you could let us know very fully your method, especially your way of brooding, we may be able to tell you what the trouble is. We are sending you under separate cover our Boys' and Girls' Club Bulletin on baby chicks. This may be of some help.

Chickens Eat Eggs

Please tell me what will cure chickens of eating eggs.—C. C. C., Short Creek, Ariz.

The habit, if it can be called habit, of eating eggs, is not intentionally formed, but by accident. Generally a soft shell or broken egg convinces the hens that raw eggs are good food, and after a few tastes the vice becomes fixed and the next step, breaking eggs, is easy. The only sure cure we have found, after trying about everything recommended, is dark nests. This is rather prevention than cure, but acts as a cure in that the hens soon forget the habit when they no longer see the eggs, even tho they be broken. An abundance of egg shells kept before the hens, is advised. Also filling some egg shells with mustard or other noxious material, and often this will affect a cure.

Don't Dope Your Hens

Is Pratt's Poultry Regulator good to feed chickens all the year around? Have some hens whose combs seem to get pale and seem drowsy and don't move about much. Can you tell me what is the disease and what treatment is good for it?—L. J. K., Rincon, N. M.

In answer to your inquiry regarding patent poultry foods and regulators, will say that we are not familiar enough with these condiments to say whether they are good or bad. There was a time when we believed everything we read and tried everything on the market, but for many years we have shunned everything of the kind, even when such material has been sent out on free trial. About the only regulators necessary in dealing with poultry is that of good care and prevention. Epsom salts and sour milk are probably worth more to the flock when used judiciously than all the condiments and medicines in the world. The hen is afflicted with so many disorders and diseases that it would require a drug store and expert diagnostician and surgeon to even attempt to regulate them. A hen is of too little value to dose in the hope of making her well. The time lost by the doctor and hen will never be made up by the hen later in life even if she recovers. The patent regulators undoubtedly have some value, but the question in my mind is whether or not they are equivalent to the cost and whether it would not be better to keep the flock in good physical condition by preventive conditions, such as clean surroundings, clean roosts, clean bodies and a variety of good clean feeds. In reply to your second question we can only give you the advice given to others in former issues of Western Farm Life that if the trouble you mention is common in your flock, send a specimen to the Veterinary Department of your State Agricultural College, first writing them for directions as to how to ship. Your description is not full enough to help us to determine the cause. Our policy has always been that at the first sign of disorder either in chick or grown fowl, to look for lice on the bodies or mites in the roosting quarters. Nine times out of ten, lice and mites are at the bottom of the trouble.

Starting in Poultry

I am going to purchase some pure bred fowls this spring and after reading your very sensible talks on poultry raising in Western Farm Life feel sure you can give me the advice I am looking for. We have an excellent market here for eggs, dressed and live chickens, and I am quite undecided as to the breed that would give most satisfaction. I have thought quite strongly of getting some Dark Cornish but am entirely unacquainted with them myself, but have read they were an ideal fowl. My husband thinks the White or Brown Leghorn would meet our needs best. What would be your advice? Please tell me what you know about the Dark Cornish. Can you give me the name of a reliable breeder that keeps them? Do you think one kind of Leghorn better than another? If so, name the kind. I want your advice as to the most successful way of getting a start in pure-bred fowls. Some think it best to buy day-old chix and others think older ones are cheaper. I want to get some good fowls but must start in an economical way. If I buy day-old chicks can I take care of them without a regular brooder? Can you send me plans for home-made brooders?—M. K., Huntington, Utah.

I think you are wise in getting into the pure bred poultry business, as the market will pay more for a standardized product of any kind. You will be especially wise if you select the breed or variety that comes nearest to what we consider a laying type. Extreme size in fowls is not desirable, but where you furnish both eggs and marketable fowls some attention must be given to weight. I am enclosing a list of breeders of pure Cornish, advertised in Western Farm Life. I know of no commercial poultry farms breeding the Cornish, where eggs are the chief consideration. The Leghorns are usually chosen, and so far as performance is concerned there is no difference between the brown and white. In some sections of the country it is easier to secure breeding stock of the white than the brown, and many keep them on that account. Where both eggs and fowls for the market are desired, the Rhode Island Reds, Plymouth Rocks and Wyandottes are probably the best breeds we have. Careful records of reports from the egg laying contests held within the last dozen years is of value, and while the extremely large breeds sometimes appear in the lead, on the whole the lighter breeds have proven the more prolific layers. Also in working for winter eggs, especially where the summer season is short as it is in the mountain regions, a quick maturing fowl is essential. In Western Farm Life of February 1st, 1917, you will find an article on grading up the farm flock. This will answer your question as to the best method of getting a start in the pure bred fowls. Should you buy day old chicks, by all means get a good hatching brooder. Some people have splendid success with home made brooders, but usually home made contrivances are most costly in the end. A great many chicks are raised along side of the stove in boxes, by the aid of hot bricks or jugs of hot water, and we have done much of this, but we believe the best investment we ever made was in the purchase of a good substantial brooder.

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WHITE ORPINGTON EGGS FROM LARGE scored birds. $6.00 per 100, $1.50 setting. Otto Hamon, Beaver Crossing, Neb.

S. C. BUFF ORPINGTONS—EGGS $1-15; $3.50, $4.50-100. Fine winter layers. Blue ribbon stock. Mrs. Joe B. Sheridan, Carneiro, Kan.

BIG BUFF ORPINGTONS—MOST PROFITABLE eggs on market. Eggs, $1.00 for 15; baby chix, 15c each. Jas. M. Green, Scottsville, Kan.

CEDARDELL POULTRY FARM—S. C. BUFF Orpingtons, exclusively bred for size, color and eggs. $1 per 16, $5 per 100. Martha Brown, Parkerville, Kan.

SINGLE COMB BUFF ORPINGTON EGGS, $1.50 for 15; 8-pound hens; 13-pound cockerels; the kind that lays—the kind to sell. H. M. Wilkinson, Ansley, Neb.

WHITE ORPINGTONS—ALDRICH STRAIN Direct. Eggs, $1.50. Two extra choice pens, $3.00 per 15. Fertility guaranteed. H. M. Goodrich, 712 Topeka avenue, Topeka, Kans.

WYANDOTTES

GOLDEN WYANDOTTE EGGS—CHOICE PEN. Frank Gould, Opolis, Kans.

WYANDOTTES—WHITE AND COLUMBIAN—Won firsts five states. Eggs. Catalog. Templedotte Farm, Lexington, Neb.

GOLDEN WYANDOTTES—WINNERS IN THE best shows; 200-egg strain; $1.50-$3.00 per setting; $8.00 hundred. Highland Poultry Farm, Fairbury, Neb.

CLARY'S "CHALK WHITE" WYANDOTTES are winners. Egg orders booked now. $2.00 per setting, $8.00 for 100. Geo. Clary, Fairbury, Neb.

FARM RAISED WHITE WYANDOTTES—FOR over 30 years. Eggs, $3.00 per 100. W. Chinese geese eggs, 20c each. C. H. Beethe, Elk Creek, Neb.

PARTRIDGE WYANDOTTE—LAYERS AND prize winners. Eggs, $3.00 per 30. Mating list. Satisfaction guaranteed. T. Cline Lee, Elk City, Okla.

BRAHMAS

MAMMOTH LIGHT BRAHMAS; EGGS, $1.00 per 15. A. M. Richardson, Altoona, Kans.

PURE-BRED MAMMOTH LIGHT BRAHMAS; 15 eggs, $1.00. Cora Lilly, Olivet, Kans.

EGGS—PURE-BRED LIGHT BRAHMAS; 15, $1.00; 50, $3.00; 100, $5.00. Mrs. Grace Buskirk, Pender, Neb.

MY LIGHT BRAHMAS AGAIN WIN SWEEPstakes in the big 1917 Denver Stock Show. Hatching eggs for sale; prices reasonable. E. Grosser, W. 23rd and Perry, Denver.

ANCONAS

ANCONAS — FARM RAISED — EGGS AND stock from prize winners. Mrs. D. S. Davis, Littleton, Colo.

CORNISH

QUALITY DARK CORNISH, THE IDEAL FARM fowl. W. W. Officer, Fowler, Colo.

DARK CORNISH, PURE BRED, 15 EGGS $1.75. Ancona-15, $1.25, prepaid. Maggie Johnson, Peru, Kan. R. No. 1.

JANDEBEUR'S QUALITY DARK CORNISH—Hatching eggs from prize-winners; eggs, $1.50 up. Baby chicks, 15c up. Write for mating list. R. H. Jandebeur, Alma, Neb.

MINORCAS

SINGLE COMB BLACK MINORCAS. EGGS $5.00 hundred. Claude Hamilton, Garnett, Kan.

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SINGLE COMB BLACK MINORCA EGGS FOR sale. The large kind. Geiger and Whatglen stock. Satisfaction guaranteed. Ed Leach, Randolph, Kan.

BUTTERCUPS

SICILIAN BUTTERCUPS, THE FOWL FOR farmer, fancier and family. Circular and mating list free. W. Bachmann, 1039 Fillmore st., Denver, Colo.

LANGSHANS

BLACK LANGSHAN COCKERELS FOR SALE. Margaret McClune, Wallace, Kan.

GET MY FREE MATING LIST OF CHICAGO and Madison Square prize winning Langshans. John Lovette, Mullinville, Kan.

BLACK LANGSHAN EGGS—LESS THAN 100-7c. Over 100, 6c. Baby chicks, 15c each. Mrs. Geo. W. King, Solomon, Kan.

MOTHER'S AND MINE FOR 17 YEARS. WHAT? Quality, farm-range White Langshans. Eggs, $6.00 per 100; $1.25 per 15. Mrs. Jas. Dorsett, Tonkawa, Okla.

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WHITE-FACED BLACK SPANISH FROM THE best stock to be obtained in this country. Have sold out on stock, but can furnish eggs, $2.00 per setting, $10.00 per 100. W. W. Yale, Chickasha, Okla.

HOUDANS

HOUDANS—VIGOROUS, MAGNIFICENT BIRDS. W. D. Gay, Essex, Iowa.

DUCKS

ENGLISH PENCILED RUNNER DUCK EGGS, 15-$1.00. Joseph Kepple, Richmond, Kan.

FAWN-WHITE RUNNERS; 13, 75 CENTS; 100, $4.00. Mrs. Jno. Whitelaw, Lawrence, Kans.

RUNNER DUCKS AND POLISH EGGS, $1.00 setting. Undefeated; best. Ora Dubbs, Douglas, Kan.

BABY CHIX

50,000 PURE-BRED BABY CHICKS TO SELL, 10 cents each. Wanted, good, pure-bred eggs, premium above market price. Colwell Hatchery, Smith Center, Kans.

SEVERAL VARIETIES

DUCK EGGS, 75C PER DOZEN. GEESE EGGS, 25c each. Postpaid. Lawrence Mantey, Carr, Colo.

SINGLE COMB REDS AND BUFF LEGHORNS. Eggs for winter layers by the 100. Elmer Carson, 34th and California, Omaha, Neb.

EGGS FOR HATCHING—MATING LIST FREE. S. C. Buff Orpingtons, Toulouse Geese, Indian Runner Ducks. Peter Brehm, Harvard, Neb.

BUFF PLYMOUTH ROCK, ROSE AND S. C. Brown Leghorns; White Pekin duck eggs for hatching. Mrs. J. D. Brown, Ft. Morgan, Colo.

EGGS — ALL STANDARD VARIETIES. Healthy farm flocks of good quality, color, size. Prices right. We stand by our name. Square Deal Poultry Association, Mrs. Fern Ogilvie, Sec'y, Beaver Crossing, Neb.

EGGS—WORLD RENOWNED "RINGLETS." New York prize winners past 20 years. Pens No. 1 both matings, $3.00 and $4.00; 15, $2.00; 50, $3.00; 100, $5.00. Pheasant, $4.00 dozen. Cockerels, $2.50. Harper Lake Poultry Farm, Jamestown, Kan.

ALL VARIETIES LAND AND WATER FOWL, imported stock. Winners of thousands of prizes. List free. Rose Lawn Poultry Farm, Beaver Crossing, Neb.

COLUMBIA HATCHERY—ALL LEADING VArieties of baby chicks, cockerels and hatching eggs. Reds, Rocks, Leghorns, Orpingtons, etc. Live delivery of baby chix guaranteed to your express office. We ship to all parts of Colorado, Wyoming, New Mexico. Write for price list. P. O. Box 1102, Denver.

EGGS, EGGS—FROM THOROBRED TURKEYS, geese, 8 kinds of ducks, Pearl and White Guineas, Barred, White and Buff Rocks, Houdans, Rhode Island Reds, Hamburgs, Games, White and Silver Laced Wyandottes, Leghorns, Langshans, Light Brahmas, Minorcas, Cochins, Buff and White Orpingtons, Bantams, also Hares, Rabbits, Guinea Pigs and Fancy Pigeons. D. L. Bruen, Platte Center, Neb. Write wants.

INCUBATORS

IT'S GOOD BIG HATCHES YOU WANT THIS year. Denver incubators are built and tested for this dry climate and positively do the work. Get our free catalog. Low prices, with freight prepaid. Coal heated colony brooders. Baby chicks and eggs for hatching from purebreds. Denver Incubator Co., 177 S. Broadway, Denver, Colo.

PET STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

YOU CAN MAKE A GOOD LIVING IN YOUR back yard raising rabbits for us. We will pay you from $1.00 to $2.00 each for youngsters. Breeders furnished at reasonable prices. Send dime for contracts and circulars. Thorson Rabbit Company, Aurora, Colo.

LIVE STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

CATTLE

MILKING SHORTHORNS AND JERSEYS FOR sale. W. A. Wigbt, Las Animas, Colo.

FOR SALE—DOUBLE STANDARD POLLED and Horned Hereford bulls. Wallace Libbey, Maxwell, N. M.

FOR SALE—ONE REGISTERED 15-MONTH-old Holstein bull and high-grade Holstein calves. Apply to Union College Farmer, Chas. A. Williams, College View, Neb.

HEREFORDS—15 YEARLING BULLS AND about 30 bull calves, all registered, and of the best breeding and individuality. Among the yearlings are three herd headers, also one 4-year-old bull by Simoon. All at popular prices in order to sell. J. O. D. Ranch, Aroya, Colo.

REGISTERED JERSEYS AND MILKING SHORTborns. Jersey herd headed by Maggie's Sby Duke, 140084, Grand Champion Denver Stock Show. Two nearest dams average 54 lbs. milk per day. Shorthorns headed by Independence Lee 427351. Two grandams average 9023 lbs. milk in one year. The Hinman Silo Co., 1650 Champa st., Denver.

HOGS

REGISTERED, BIG TYPE DUROC JERSEY hogs for sale. Edgemoor Farm, Littleton, Colo. Caldwell Martin, Owner.

REGISTERED DUROC JERSEY BOARS AND gilts, sell at $15 and up according to age and quality. We are sold out on bred gilts, but can contract for gilts to be bred for later farrowing. Our sales at the Denver yards speak for the quality. J.O.D. Ranch, Aroya, Colo.

DUROC JERSEYS FOR SALE—PURE BRED registered Duroc Jersey boar and eight sows. 19 head brood sows, not registered. Priced for quick sale. Let me know your wants. Address H. D. Rockefeller, Lock Box 21, Kremmling, Colo.

HORSES

FOR SALE—IMPORTED ROAN 8-YEAR BELgian stallion, 2,100. One 3-year bay Belgian, 2 roan yearlings. As good as you will find anywhere. Purinton Bros., Wilcox, Neb.

NOBLE REX, 5-YEAR-OLD REGISTERED SADdle-bred stallion, 16 hands, black, 1,200 lbs. Grand individual, goes all five gaits; winner of stallion class at 1917 Denver Stock Show. By a son of the immortal Rex McDonald. J. O. D. Ranch, Aroya, Colo.

JACKS AND MULES

KIT CARSON, A BIG-BONED 7-YEAR-OLD jack, winner at Denver show, $500. Also a great yearling jack, promises to be bigger and better than his sire, and out of a jennet who took first at Denver also; price, $250. We have some excellent mules for sale; all ages and sizes. J. O. D. Ranch, Aroya, Colo.

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WANTED—TO HEAR FROM OWNER OF GOOD farm for sale. Northwestern Business Agency, Minneapolis, Minn.

WANTED—TO HEAR FROM OWNER OF FARM or unimproved land for sale. O. K. Hawley, Baldwin, Wis.

WANTED—HEAR FROM OWNER GOOD FARM for sale. Cash price; description. D. F. Bush, Minneapolis, Minn.

WANTED—TO HEAR FROM OWNER OF GOOD ranch for sale. State cash price and description. D. F. Bush, Minneapolis, Minn.

STOCK RANCH, $1,900; IMPROVED; 200 acres; deep soil; timber; high schools; dry farming or irrigation. E. Hopkins, Nucla, Montrose county, Colo.

I HAVE SOME CASH BUYERS FOR SALABLE farms. Will deal with owners only. Give full description, location and cash price. James P. White, New Franklin, Mo.

WANTED—GOOD FARMERS TO LEASE WELL equipped irrigated farms at Rock River, Wyo. Well constructed and sufficient irrigation system. Liberal terms to capable and industrious farmers. Apply H. W. Brettell, Rock River, Wyo.

IMPROVED QUARTER SECTION IN KIOWA Valley. Windmill, silo, 4-room house, barns, 40 acres broken, 10 acres alfalfa, $35.00 per acre. $2,000 cash, balance easy terms, 6%. Reynolds, Covey & Reynolds, 205 McPhee Bldg., Denver.

400 ACRES NON-IRRIGATED LAND, SHALLOW to water, dark loam soil, lays practically level with south slope; good fence; near school; good farms surround same. Price, $15.00 acre. Terms. 22 miles of Denver, 7 miles good town. A. J. Simonson. 214 Cooper Bldg., Denver.

GOVERNMENT LANDS

GOVERNMENT, STATE LAND—BARGAINS. Booklet free. Joseph Clark, Sacramento, Cal.

MONTANA HOMESTEADS—16,000,000 ACRES. 640 acres or 320 acres for you; circulars free. Homestead Bureau of Montana, Dept. 87, Box 845, Butte, Mont.

LAND—I HAVE PLACED OVER 400 FAMILIES in Weld county, mostly on homesteads and relinquishments. I know nothing desirable left open to entry, but can still furnish partly improved relinquisbments or deeded lands at very low price. Call for list. Every statement guaranteed. Land shown by auto from Denver. Mackley, 1643 Cbampa, Denver, Colo.

SEEDS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WHITE BLOSSOM SWEET CLOVER, REASonable. John Lewis, Hamilton, Kans.

MEXICAN (PINTO) SEED BEANS—FIFTEEN cents per pound. Dutton & Stubbs, Fowler, Colo.

HIGH ALTITUDE SEED PINTO BEANS, $12.00 per cwt. L. M. Hunt Grain Co., Colorado Springs, Colo.

ALFALFA SEED FROM GROWER, $7.80 PER busbel. Sacks extra. G. J. C. Felzien, St. Francis, Kan.

SWADLEY SEED CORN, $4.00 PER HUNDRED. Raised on Swadley place. George Kimbrough, Arvada, Colo.

BLACK HILLS NON-IRRIGATED ALFALFA seed, 20c per pound. N. A. Jensen, Farmingdale, S. D.

KAFFIR SEED. BLACK HULLED, $2.00 A bu. Can furnish car lots. Samples submitted. A. M. Brandt, Severy, Kan.

SEED CORN. 1916 SELECTED GOLDEN Beauty Boone County Strawberry red. Samples submitted. $2.50 bu. A. M. Brandt, Severy, Kan.

ALFALFA SEED FROM NORTHWEST KANSAS, 95 per cent pure, good germination, $5.50 per busbel. Geo. Bowman, Logan, Kan.

SEED PEAS—SAN LUIS VALLEY SEED PEAS. Prices and samples gladly submitted. Local and carload shippers. A. A. Salazar & Son, San Luis, Colo.

WE HAVE FOR SALE COLORADO YELLOW Dent Seed Corn at 5c a pound. This corn is dry land grown, produced 34 busbels per acre. Lesh Bros., Nunn, Colo.

ATTENTION FARMERS—BUY YOUR GRIMM alfalfa seed, Holgrimson and Lyman strains, direct from grower. Will furnish affidavits showing its bistory. Purity test, 99.39 per cent. Price 42c. Triangle Ranch, Cottonwood, S. D.

LUMBER

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LUMBER, MILLWORK, FENCE POSTS, WHOLEsale mill prices. Send carpenter's list for freight prepaid estimate. Keystone Lumber Company, Tacoma, Wash.

HELP WANTED

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WORK FOR UNCLE SAM. HE IS THE BEST employer. Big pay, sure work, easy bours, long vacations, rapid advance. Thousands of jobs open this year. I will help you get one. Write for my big free book. DY, 847, today. Earl Hopkins, Washington, D. C.

NURSERY STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

FOR SALE—EVERBEARING STRAWBERRY Plants, superb, guaranteed to produce fruit the first year. $1.00 hundred, $8.00, 1,000. Ed Keehn. Littleton, Colo.

TREES—20 MAMMOTH IMPROVED ELBERTA at $1.00. Order at once. Money back if not satisfied. Everbearing strawberries, $2.00 per 100. Sunflower Nursery, Lawrence, Kan.

SWEET POTATO SLIPS, ALL VARIETIES, delivered postpaid; guaranteed to arrive in good condition; 100, 35c; 500, $1.50; 1,000, $2.75. Order now—be sure of slips when you want them. Ozark Nursery. Tahlequah, Okla.

MISCELLANEOUS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

BUILD ON CONCRETE—USE STUD ANCHORS. Anchor Works, Mendota, Ill.

FARMERS AND STOCKMEN, IF TROUBLED with Loco Weed, you can kill it with our Loco Killer witbout chopping or digging. Also want men to handle territory. If interested, write Western Mfg. & Trading Co., Box 673, Denver, Colo., Successors to Weisenborn & Huck.

DELICIOUS ALFALFA HONEY FROM PRODucer. Two 60-lb. cans, $12.75. Satisfaction guaranteed. Wesley Foster, Boulder, Colo.

WOMEN, ATTENTION—SAVE MONEY. DELicious breakfast food. Easily made. Mrs. Sharp's recipe. Inclose a dime. Sharp, Iola, Kan.

LOST—SABLE AND WHITE COLLIE, WHITE ring part way round neck, full white breast. Body light, sable. Liberal reward. No prosecution. Donald Hardie, 2139 Welton St., Denver.

Live Items About Live Stock

Livestock farming during the next few years will bring bigger returns than perhaps at any time during the past.

There is and will be for some time to come a big scarcity not only in meats but in various other foodstuffs as well and the most of these are either directly or indirectly affected by livestock.

While prices have uctuated more or less, the general trend has been upward and some predict that the advance in pork will not stop until the $20 mark has been reached. Hogs hav already passed $16, while cattle have reached $13.35 and lambs $15.80. There will probably be a falling off in beef when grass stuff begins to move, but port and mutton are expected to continue to advance. There is no probability that livestock prices will fall belof a remunerative level for many months. Farmers will take absolutely no chance in raising all the livestock possible and in growing all the feed possible.

SHEEP ON EVERY FARM

During this, of all years, the farmer should plan to economize and to produce every pound of food possible. There is a great world's shortage of food and unless the amount raised far exceeds the annual production during the past few years, there will certainly be much suffering among people who will be unable to afford even the necessities.

On every farm, quite a saving can be made as well as a material profit realized, by running a flock of sheep. Nearly every farm produces feed that is not used. The stubble field is a source of considerable feed, both in shattered grain and in the growth of weeds and grasses that spring up after the grain has been cut. Horses will eat about twenty-five per cent of the weeds, but sheep will eat seventy-five per cent of them and will graze enough to keep in check fifteen per cent more of the weeds.

With wool selling at forty-five cents and lambs at fifteen cents, the running of a small flock of sheep should appeal favorably even to a cattleman. From a profit standpoint, a farmer could not make money much easier than by putting a woven wire fence around at least part of his field and run a flock of sheep which, while transforming waste into fifteen cent mutton, would at the same time fertilize the soil, which would make an increased yield the following year.

PRINCESS OF EDGEMOOR 194800

First Prize Under Year Sow, Junior Champion Sow. and Grand Champion Sow, National Western Stock Show, Denver, 1917. Owned by Caldwell Martin, Edgemoor Farm, Littleton, Colo.

BUSINESS CHANCES

FREE FOR SIX MONTHS—MY SPECIAL OFfer to introduce my magazine, "Investing for Profit." It is worth $10 a copy to anyone who has not acquired sufficient money to provide necessities and comforts for self and loved ones. It shows how to become richer quickly and honestly. Investing for Profit is the only progressive financial journal and has the largest circulation in America. It shows how $100 grows to $2,200; write now and I'll send it six months free. H. L. Barber, 449-20 Jackson Blvd., Chicago.

PATENT ATTORNEYS

IDEAS WANTED — MANUFACTURERS ARE writing for patents secured tbru me. Four books witb lists bundreds inventions wanted sent free. I help you market your invention. Advice free. R. B. Owen, 162 Owen Bldg., Wasbington, D. C.

BEE SUPPLIES AND HONEY

BEE SUPPLIES OF BEST QUALITY. SEND for 68-page illustrated catalog. We also sell comb and extracted honey. The Colorado Honey Producers' Association, Denver, Colo.

KODAKS

KODAKS, CAMERAS, PHOTO SUPPLIES—Ford's, tbe best kodak store, 1029 16th St., Opp. Old P. O., Denver, Colo., for Eastman Kodaks, all makes cameras, films, photo supplies; develop any size roll films, 10c; print pictures, 3c eacb and up; mail orders solicited; kodak and camera catalogs mailed free upon request. Mention this paper

IF YOU DON'T FIND ADVERTISED HERE what you want, write our classified advertising department and they will be glad to place you in correspondence with the right parties.

It devolves on the farmer to increase his production sufficiently to meet the great food shortage and he should employ every possible means to conserve the waste and raise the maximum amount of produce.

BLACK NOW AMMONS' PARTNER

Ex-Governor Ammons has sold a half interest in his ranch at Parshall, Colo., to Charles F. Black, who will manage the property. Mr. Black is an experienced ranchman, having been located in Middle Park for seventeen years. This will relieve Mr. Ammons of considerable detail and enable him to give more time to his many other duties as head of the Farmers' Life Insurance Company, vice president of the State Board of Agriculture and his public activities in the interest of better agriculture.

Forage Crops

Kindly answer thru your paper the following: I wisb to sow sometbing on wbeat stubble so tbat I will not have to plow again for it, merely use tbe disk once or twice. Would you advise sweet clover? If so, bow much sbould I sow per acre and wben? I want to cut tbe crop for bay during the summer, tben pasture in tbe fall. Would cane or Sudan grass answer for tbis purpose? Am informed tbat rye would not be practical for hay and pasture for dairy cows.—M. T. K., Deertrail, Colo.

I am afraid you are attempting an impractical method when you expect to cut a forage crop off dry land and then get a pasture crop. You should be satisfied with getting a good crop for winter feeding. Of course, if the season happens to be quite favorable and there is considerable precipitation you might get some pasture, but in the event there is a second growth, you would find it more practical to either let it remain for winter protection and for the growing of a larger crop next season, or plow it under to add humus to the soil.

Sweet clover would perhaps be the best seed that you could sow, but it is impractical to expect too much from dry land. If you sow sweet clover, it should be put in the ground early in the spring.

Lousy Goats

I have only a few goats, not enough to bother putting up a dipping tank. Could you tell me some way of getting the lice off them? They are just covered with them.—L. D. W., Colo.

If there is no dipping tank in the neighborhood you could use a sprinkler as is frequently done in the case of hogs or cattle where one has but a small bunch. Use any of the coal tar products diluted according to directions and if you have no sprinkler you could make one out of a can of some kind. Of course, it will be necessary to sprinkle the goats thoroly so as to get them well saturated with the liquid.

Mare Has Bladder Trouble

(1) I have a 9-year-old mare which seems to have trouble with her kidneys. If I drive or ride her a ways and stop, then she lets go a few drops of water, sometimes clean and sometimes like dirty road water and then sometimes with a little blood in it, according to how hard she is driven. I had a blood medicine once from a veterinarian, but it is almost impossible to give it to her, not even witb a syringe. Would it be safe to breed tbe mare in the spring?

(2) I would like to bear your opinion as to which of the following I'd better put my stable manure on, the fall grain while ground is frozen, very thin; on stubble ground to be summer fallowed, or on new broken sagebrush land to be put in wbeat next spring?—Muller Bros., Idaho.

(1) Your mare is troubled with cacali of the bladder. Give her a half teaspoonful of resin in her feed once daily until the trouble is corrected. It will be safe to breed her.

(2) It is always well to spread manure on the soil that most needs it and this would be either on your fall grain or stubble ground. A thin coating of manure on your fall grain would doubtless increase the yield and a heavy coating on your stubble ground would add much humus and enable the soil to produce better crops. If you have sufficient manure for both pieces of ground it would be well to fertilize both.

Better Cultivation with a

Samson Sieve-Grip Model S-25

SAMSON SIEVE-GRIP TRACTOR

Reg and Pat U. S. and Foreign Countries

will mean bigger, better crops. You want your land to produce more than ever before.

Get a Samson Sieve-Grip for this season's work—it will help you do this!

Ask us how!

Two Sizes—Models S-25 and R-12

SAMSON SIEVE-GRIP TRACTOR CO., Stockton, California.

Tear off and Mail

Send Catalog and magazine "Salinas"

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Become an Auctioneer Free circular. Ability developed or money refunded. Sargent's International Auction School, Denver and Sioux City.

160 ACRE FARMS IN WESTERN CANADA FREE

Canadian Farmers Profit From Wheat

The war's devastation of European crops has caused an unusual demand for grain from the American Continent. The people of the world must be fed and wheat at over $2 per bu offers great profits to the farmer. Canada's invitation is therefore especially attractive. She wants settlers to make money and happy, prosperous homes for themselves by helping her raise immense wheat crops

You Can get a Homestead of 160 acres FREE and other lands at remarkably low prices. During many years Canadian wheat fields have averaged 20 bushels to the acre—many yields as high as 45 bushels to acre. Wonderful crops also of Oats, Barley and Flax.

Mixed Farming as profitable an industry as grain raising. The excellent grasses full of nutrition are the only food required for beef or dairy purposes. Good schools, churches, markets convenient, climate excellent.

There is now an extra demand for farm laborers to replace the many young men who have volunteered for service in war. The government is urging farmers to put extra acreage into grain. Write for literature and particulars as to reduced railway rates to Supt. of Immigration, Ottawa, Canada, or

J. L. PORTE

Dunn Block, Great Falls, Mont. Canadian Gov't Agt.

REGISTERED BULLS

HOLSTEIN, JERSEY, AYRSHIRE, SHORTHORN

Bred by the Agricultural College. Most of the dams in the advanced registry.

Animal Husbandry Department

COLORADO AGRICULTURAL COLLEGE

Fort Collins, Colorado

Iowa State Live Stock Insurance Company

Home Office, Des Moines, Iowa

Colorado Office, No. 314 Tabor Opera House Building, Denver.

We write a blanket policy and also a special policy on registered stock.

AGENTS WANTED IN COLORADO

The Grange

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C. W. SWAYZE, Stockyards Sta., Colo., Lecturer.
E. S. RHEA, Golden, Colo., Treasurer.
RUDOLPH JOHNSON, State House, Denver, Secretary.
OTIS SCRUGGS, 415 Charles Block, Denver, Business Agent.

At this time of extreme emergency, the Grange as well as every other organization, owes a special duty to its country. Our country has entered the world war, not with a desire for gain in any particular, but for the purpose of maintaining those great basic principles of right without which nations must crumble and fall. The appeals of starving women and children, the wanton destruction of life and property on the great seas have not been made in vain and even at the sacrifice of happiness, prosperity and life itself, our great nation has been forced to step into the breach and demand that justice be done to all.

Our country needs 2,000,000 volunteers—1,000,000 to man the guns and another million to grow feed for men and horses on the firing line. The greatest food shortage in the history of the world is being experienced and the Grange, of all other organizations, is the one to volunteer its services in this emergency. Every member of the Grange, man, woman, boy and girl, should enlist as a soldier in this great and worthy cause, and do his part towards increasing the food supply. Few of you are in a position to go on the firing line, but you can serve your country in equally as noble a way by furnishing the food supply for the boys at the front who must suffer the real privations and sacrifice their lives if need be.

There is scarcely a member of the Grange, the head of a family, who, in some way, cannot materially increase his acreage this season and do his part in increasing the food supply of the world. If you are unable to make this increase without assistance, write the Grange department of Western Farm Life, state particulars, and we will be glad to co-operate with you.

This subject of increasing the food supply should be taken up at the first meeting of every subordinate Grange in the state and thoroly discussed, and what is more important than discussion, is definite action that will lead to results. We should bear in mind the fact that we are all subject to the call of the president, but members of the Colorado State Grange will not await this call but will measure up to the full responsibility of citizens and patriots.—H. S. G.

Use the Business Agent

To the Members of Subordinate Granges in Colorado:

The State Grange business agent, Brother Otis Scruggs, 415 Charles building, Denver, whom we have appointed, will not be of any value to the members unless you make use of him or the information that he secures for you. The final results of this venture will depend just as much upon how much the members make use of the information he secures and the contracts he makes as it will upon the diligence and intelligence he puts forth in securing the information and making the contracts. Question: Will the members do their part if the business agent does his?

Just so with the Subordinate Grange. It will not bring you the self-development nor the social and educational advantages unless you do your part. It is not alone a question of leadership, a question of opportunity, but it is equally a question of how much the membership of all Subordinate Granges will appreciate our State Grange business agent and make use of the business agent during the year.

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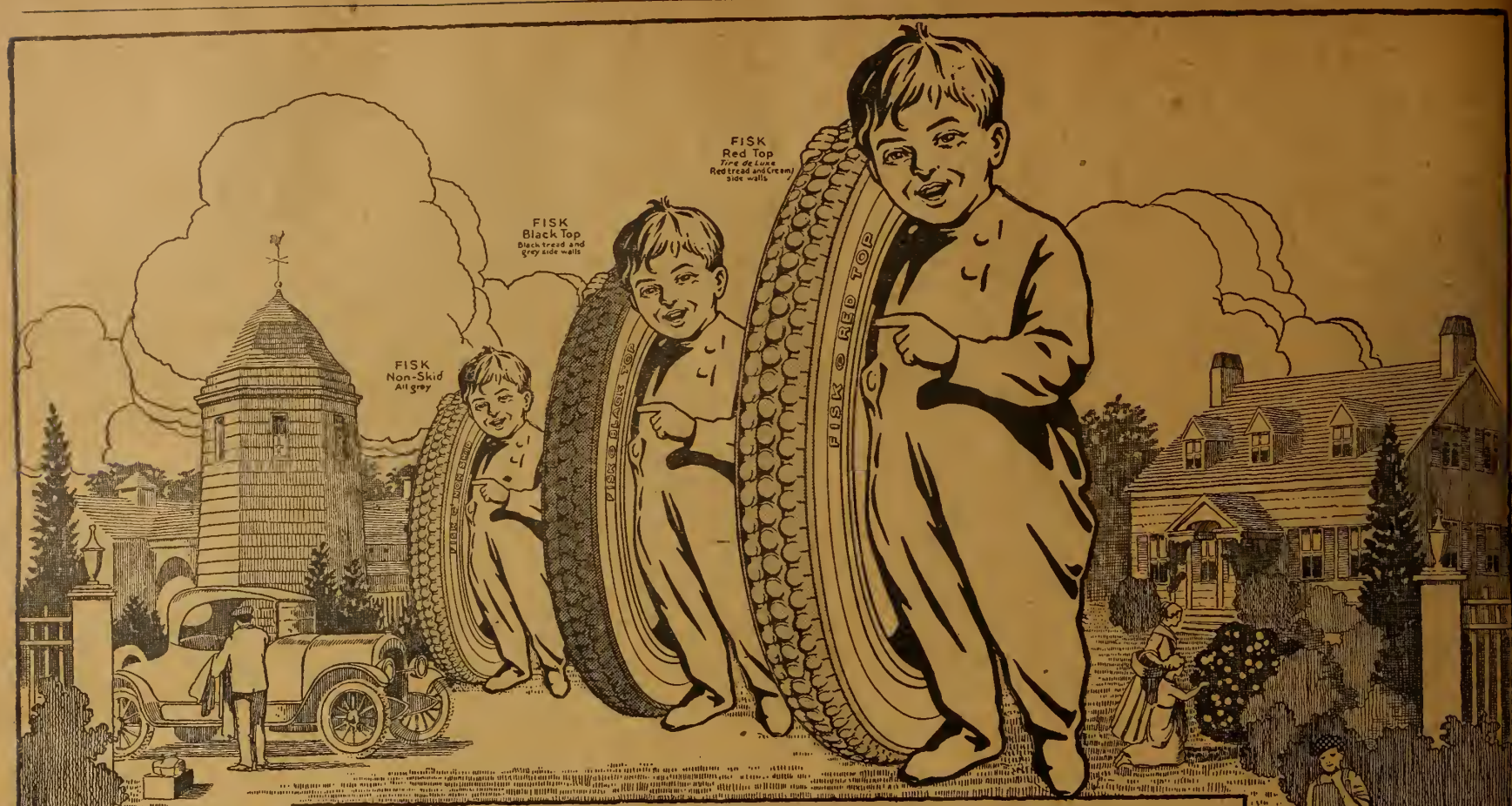

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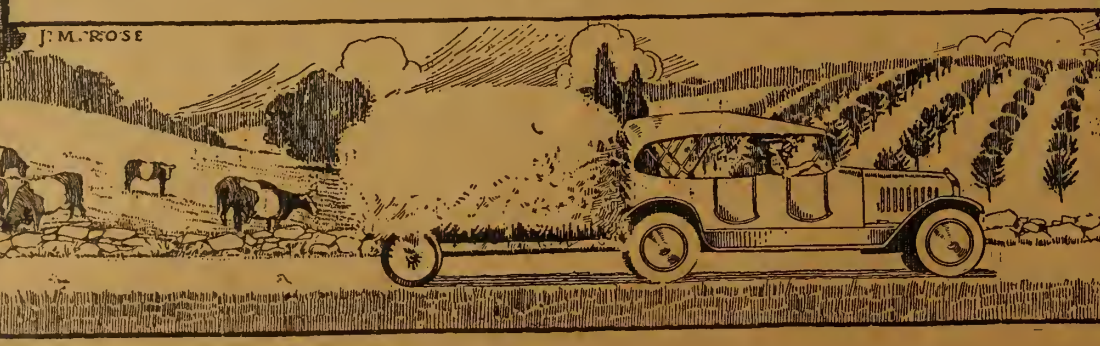

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WESTERN Farm Life

Denver, Colorado
May 15, 1917

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Rudolph Johnson

Vernon Grange, in Yuma county, holds its meetings at the homes of the members, deciding at each meeting where to hold the next. This grange has over a hundred members, living over a stretch of plains twenty miles wide and about thirty miles in length, making an area of about six hundred square miles in which this grange has jurisdiction. In this region the energetic secretary and local insurance agent, Mrs. C. H. Ellis, wrote over $100,000 of grange fire insurance during 1916.

Granges in the vicinity of Denver, Boulder or Fort Collins are most fortunate in having available at small expense lecturers and speakers from the University of Colorado or the Agricultural College, or men in public life who can deliver addresses on topics of interest. Granges in distant corners of the state rarely, if ever, have speakers outside of their own members. Some granges never consider matters of general public interest in their meetings, and some few granges hardly do more than go thru the ritual and adjourn. This condition of affairs could be remedied with a lecturer who is alive and efficient. Good material for programs can usually be found right at home. Well-informed men of the vicinity or county are usually willing to aid on invitation. Women of ability in some line of entertainment are usually present in every community. Speakers from the colleges can usually be obtained at no cost except transportation expenses. And the meetings can be made interesting in the most remote localities.

Plans are already being made for the series of state grange picnics to be held next summer. It is probable that the principal speaker will be Mr. R. M. Ketcham, Master of the Michigan State Grange, and a week of meetings in various parts of the state will be arranged as during the past years. Granges in localities where it is not possible to meet during this week will hold their own meetings to suit their convenience. The state secretary would appreciate notices of all these meetings or picnics, for publication in the announcement of the field meets.

Too much emphasis can not be laid upon the necessity of having the officers of granges keep accurate account of all transactions and money received and spent. Much trouble that could have been easily avoided has arisen because some secretary, or treasurer, or purchasing agent, has not kept a record, or has made errors in the accounts. There is usually no suspicion of a person's honesty, but when records are kept in a slip-shod manner, when the books do not balance, or when accounts are lacking, other members of the grange will begin to wonder why. Strict accuracy and a thoro knowledge of matters entrusted to their care are required of these officers.

West Plains Grange No. 267, altho less than one year old, has a membership of nearly 100, and has applications for membership coming so fast that we had to borrow an extra goat, as our original means of initiation showed signs of overwork. We have completed a grange hall of dimensions 20x32 feet, which will be used as a community building, or civic center, for all sorts of gatherings. We have a grange debating squad, with some good debaters, and we are organizing a literary club, a baseball team, and a Sunday school. At a recent pie supper Mr. Burckhalter, the county agriculturist, was a visitor, and delivered a lecture on prairie dog extermination and other topics of interest to this region. We are planning on lecturers on various topics at each meeting. We meet on the second and fourth Saturdays of each month.—Charles Mader.

Enterprise Grange No. 258 held twelve meetings the first quarter with good attendance at all of them. They have organized a "Broom Corn Association" and are active in organizing new granges.

Sheridan Lake No. 293 will hold an all-day session soon with basket dinner and program.

Fruitland Mesa No. 317 has members that are very willing to do anything assigned them, something every Grange ought to be able to say. Have had a speaker from the State Dairy Commission.

Comanche Grange No. 102 gave a box social and cleared $102. The condition of the Grange is very good. Three new members were taken into the Grange last meeting.

Maple Grove Grange No. 154 conferred the first and second degrees on twenty-one candidates at their last meeting. The drill team will give an entertainment on April 28th at the Maple Grove School House to help swell the fund for the trip to St. Louis. (Continued on page 14)

FEDERAL DOUBLE CABLE BASE TIRES

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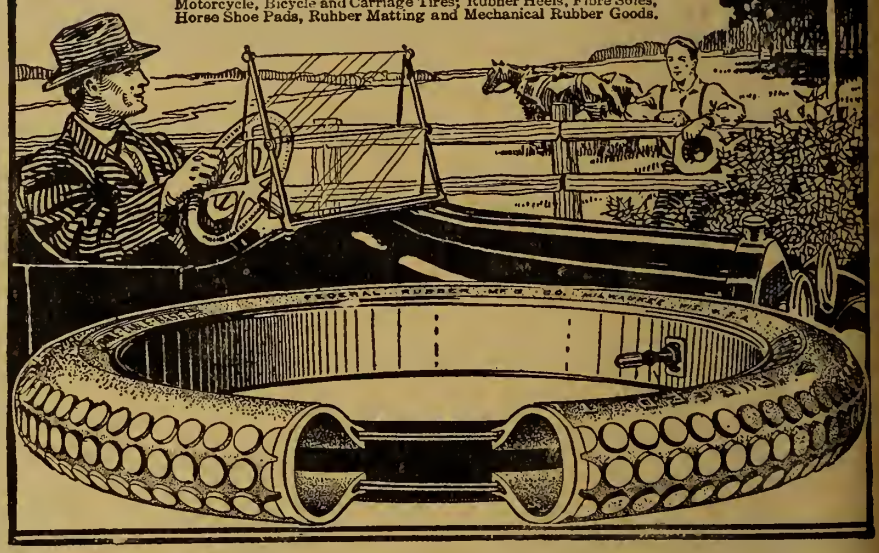

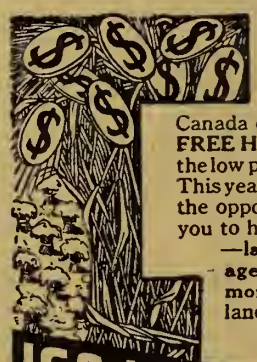

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Canada extends to you a hearty invitation to settle on her **FREE Homestead lands of 160 acres each** or secure some of the low priced lands in **Manitoba, Saskatchewan, and Alberta.** This year **wheat is higher** but **Canadian land just as cheap**, so the opportunity is more attractive than ever. Canada wants you to help **feed the world** by tilling some of her fertile soil —**land similar to that** which during many years **has averaged 20 to 45 bushels of wheat to the acre.** Think of the **money you can make** with wheat **at over $2 per bu.** and land so easy to get. Wonderful yields also of **Oats, Barley and Flax. Mixed farming** in Western Canada is **as profitable an industry as grain growing.**

The Government this year is asking farmers to put increased acreage into grain. There is now a great demand for farm laborers to replace the many young men who have volunteered for service in the war. The climate is healthful and agreeable, railway facilities excellent, good schools and churches convenient. Write for literature as to reduced railway rates to Supt. of Immigration, Ottawa, Canada, or to

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WESTERN FARM LIFE

A Western Magazine for Western Farmers and Stockmen

Comprising Ranch and Range, Farmers Life and Fruit Journal, Trans-Mo. Farmer and Ranchman

Largest Circulation of Any Farm Magazine in the West

Volume XIX | DENVER, COLORADO, MAY 15, 1917 | Number 10

Prepare the Summer Fallow Now for Winter Wheat

CONSERVE JUNE AND JULY RAINS AND DOUBLE YOUR YIELD

E. R. PARSONS

WHEN the spring work is done and the crops all in is a good time to prepare the summer fallow for the planting of winter wheat in the fall.

Does the raising of this crop by the fallow method pay? It evidently does, for the acreage increases every year and it is becoming popular in states which have hitherto raised nothing but spring wheat. In the dry farming states last year about 10,000,000 bushels were raised by this method, including California, Oregon and Utah, in which states it has become an established business.

The old way of raising winter wheat by plowing in the fall and planting immediately seldom averages much over 15 or 20 bushels per acre, and by running it in on stubble about 10; but in exceptionally wet seasons a crop may run as high as 25, and the farmer may say "what is the use of fallowing?" There are, however, many we can point to, who raise from 40 to 50 bushels every year by the use of the fallow, and when this is done it certainly pays big, for the labor expense is cut in half when a farmer can raise on one acre what the other fellow raises on two.

It is the summer rains that we depend upon to give the winter wheat a good start and hold it thru the dry fall, and the purpose of the fallow is to conserve them for this purpose.

Pasturing Will Retard It

When planted in August, the roots of the wheat will be two feet long by spring and at the first sign of warm weather the plant is in perfect condition to make the most rapid growth possible. At this period it should never be pastured, for by doing so its maturity may be retarded for several weeks, and if the weather is dry the

By plowing the land for the summer fallow about the end of May or beginning of June, we can always turn under a good crop of green weeds which gives off moisture, produces humus, and invigorates the soil. This part of our method is also an answer to some agriculturists who have criticised the summed tilling of the fallow as being wasteful of humus, for a good carpet of weeds well plowed under will provide more humus than the cultivator could destroy in several seasons.

The depth of the plowing is the principal factor in obtaining big crops—more soil, more wheat.

There are many of our friends who are plowing their fallow 6 to 8 inches deep and raising 30 bushels, which is a splendid average for the plowing; but there are others who are plowing 10 to 12 and raising 45 bushels, which equals 15 bushels more wheat for an extra four inches of plowing, the labor cost of which could not be more than $2.50. Here we have 15 bushels of wheat for $2.50. When talking farm economics, Mr. Professor, why not mention good plowing.

After the plowing the subsequent treatment of the field may depend somewhat on the soil and the situation. If it is a sandy loam and absorbs water quickly and easily, summer tilling with the harrow may be found sufficient to keep the weeds out and provide a mulch which will satisfactorily conserve the moisture, but on the other hand if the land is of the heavy type, which floods easily, a more radical preparation of the soil is necessary with an eye to accumulation as well as conservation.

Ridges Catch the Rain

This is achieved by disking and cross-disking without lapping. The disk when set deeply in plowed ground raises ridges at the outside edges over 6 inches in height. We use these ridges to catch the cloudbursts. When crossed by disking both ways, these ridges form squares or checks the width of the disk which will hold an inch or two of rain if it comes in 20 minutes. The writer used this method on his ranch and part of his orchard for over 20 years, and found it perfectly satisfactory, but on some side hills the slope may be too great to save all the water if the grade is over 2 per cent.

One or two diskings may be needed during the summer to preserve a good mulch and keep the weeds out, and then a good harrowing down before planting time in August.

Some new varieties of Russian winter wheat have been introduced lately, but unless the farmer knows of something better which has succeeded in his neighborhood he had better stick to the old reliable Turkey Red.

Methods of Cultivation

Next to plowing, cultivation is the most important operation on the dry farm. That cultivation turns up a certain amount of humus is obvious, and the practice of plowing 5 or 6 inches and incessantly cultivating to a depth of 3 or 4 inches will soon wear out a light soil; but there is no necessity for doing this, for we can plow deeply, mix the humus with a large amount of dirt, and waste so little of it by cultivation that a green crop or a stand of weeds plowed under will afford more than is used up in several years.

But humus or no humus we have to cultivate in order to conserve moisture, and any talk to the contrary is so much foolishness.

In more humid countries it is often said that cultivation is performed in order to cut off the rise of moisture to the surface by capillary action where it is evaporated and lost in the atmosphere. On the dry farm we have so little of this capillary action that it is hardly worth considering; but nevertheless we lose our moisture and lose it even more rapidly by the checking and cracking of the soil as it forms a crust and dries out.

Air movements in the top soil are caused to some extent by thermal action. When the earth becomes hot during the day the air in the soil expands, and some of it is forced out; then when it cools at night time contraction takes place and air is sucked downwards. It is this same expansion by heat that causes blowouts in our tires in hot weather. It is on account of this heating of the earth that the top two or three inches dry out so much more quickly than the fourth and fifth.

Cracks Let Moisture Escape

When the surface first commences to dry the cracks are so fine as to be almost invisible; but as they grow downwards they become wider every day, and unless this process is stopped there is practically no limit to their depth and width, and in adobe soil fissures may be found large enough for an animal to break a leg in.

It is easy to understand that with a circulation of air, evaporation may be very rapid thru these air lanes; but the whole trouble is forestalled by breaking up this crack formation with the cultivator before it gets a start; therefore, in cultivating row crops it is much better to cultivate soon after the rains when the soil shows some signs of baking than to wait until a solid crust has formed, which provides a very lumpy mulch and may leave air fissures underneath it.

When land is properly plowed not less than 10 inches deep we can cultivate 3 or 4 inches and yet have 6 or 7 left for the surface roots; but if the farmer plows 5 or 6 inches only, then after cultivating he will only have an inch or two left for his crop to grow in; therefore in order to do a good job of cultivating it is also necessary to do a good job of plowing.

In eastern farming it has always been a rule to cultivate deeply at first and later shallow; but in the dry belt, moisture being the first consideration, it is better to cultivate three to four inches all the time, in which case there are no roots to cut, for none form in the stratum which is worked; but if the corn or sorghum is laid by long enough to form roots in the mulch it would undoubtedly damage the crop to set the cultivator deep enough to tear them out.

In the dry country it is a mistake to hill up potatoes or any other crop, for in case of quick but not soaking rains it is very important that the drainage should be towards the rows, not from them.

It is obvious that in a country where rain may be expected any day a deep mulch must be provided which will aid accumulation as well as conservation, and the best for these purposes is found to be one which is level but well furrowed, granular, but not too lumpy. The dust mulch which forms mud after rainfall and prevents quick absorption is good for conserving moisture only, and is indicated for countries which have a dry spell while maturing their crops after the rainy season is over.

The question is often asked us as to how often a crop should be cultivated. Few farmers cultivate more than to keep the weeds out; but the fact of the matter is that every crust which forms should be broken up and reduced to a good mulch as soon as possible; but when the plowing is deep a crop can always be matured with less cultivation than when the opposite is the case. A crop of corn on land plowed 10 inches and cultivated three times will yield twice as much as one planted on the same land plowed 6 inches and cultivated a dozen times.

Leave a Good Mulch Alone

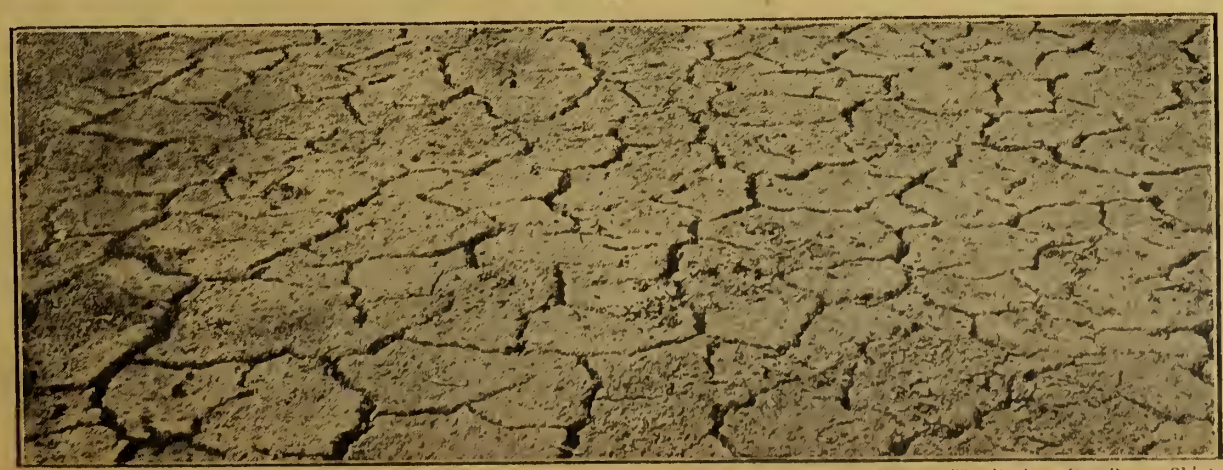
It used to be considered the thing by some farmers to cultivate incessantly in dry weather until the mulch was reduced to fine dust. We found by testing this matter out in different fields that no particular advantage was obtained by so doing, and that the best policy was to leave a good mulch alone, for altho it is true that the finer the mulch the better it conserves moisture below it, it is also a fact that too fine a mulch prevents the rains from soaking in when they do arrive, and we have seen such a field in which the corn continued to wilt for several days after a two-inch rain, while fields which had not been disturbed looked bright and fresh as tho there had been no drouth.

In long periods of dry weather a crust under the mulch will often form when shallow cultivation is practiced, and unless the plowing has been deep may seriously crowd the surface roots and damage the crop. This crust, however, can do little harm when the seed bed is deep and the plants well rooted in the subsoil.

Altho cultivation destroys some of our humus it improves the physical condition of the soil and develops plant food by breaking down the granules by attrition which exposes fresh surfaces to chemical action.

The question has been raised by Dr. Hopkins and other

(Continued on page 14)



(Courtesy The Dunham Co., Berea, Ohio)

Cracks in the Soil Allow Moisture to Escape. Cultivation Will Stop the Process.

How One Community Is Meeting the Food Shortage

EL PASO COUNTY PLAN OF FINANCING FARMERS FOR WAR CROPS

ALVIN T. STEINEL

THERE has been much lost motion, a great deal of emotion and excitement, and no end of publicity in the effort to increase the production of food and feed. Much good has been accomplished by mere agitation of the question. Some antagonism has been aroused, but the people have been set to thinking. Some have gone a step further and acted on the conviction that the agitation was based on sound reasoning. These will not be disappointed at harvest time. There are no apologies to offer for agitation of the food supply question. In the last analysis we are all consumers and when we pay out our cash over the counter at prices such as have never before prevailed, within the memory of men now living, we are forced to the conclusion that there isn't enough food to go around.

But while others have been talking there is one community, at least, that has been taking well directed action toward increasing production. This is not the only one, but its work has been so signally successful that details are here given for the benefit of other sections that wish to adopt a practical plan.

I am referring to El Paso county, Colorado, with Colorado Springs as the trading center. Some years ago disaster overtook new settlers in the eastern part of that county. Drouth and inexperience combined reduced a lot of them to actual want. To relieve this want a fund was raised for lending purposes. The settlers were financed at reasonable rates of interest and they were able to pull thru a hard winter and, from the following season's crops, to pay off the debt. Some required more than a year's time, but eventually practically every cent came back to the lender.

This fund served its purpose so well that the organization back of it, comprising Colorado Springs business men interested in the advancement of agriculture, was kept alive. New people were always coming in, consequently there was a constant call for short time loans. When the present food emergency arose El Paso county had the machinery already prepared and well greased. All that was necessary was expansion of the fund, or rather the capital stock of the organization, a corporation known as The Farm Loan Company. The paid in capital was increased up to $15,000 and arrangements were made with the Colorado Springs Clearing House to take the notes and furnish additional funds up to 80 per cent of their face value, to lend to others. Paper will be handled up to a maximum of $50,000, if so much should be called for. The company is officered as follows: Irving Howbert, president; John Lennox, secretary-treasurer and general manager; J. G. Dern, J. J. Eubank, Wilmer Henning, B. S. Kaufman, B. A. Banta, Dr. A. C. Magruder and Leonard Curtis, directors.

Expect a Fair Profit

These men are not doing the work for charity; they expect a reasonable profit on the money they put in—the same that the clearing house asks on its additional funds, namely 6 per cent. The borrower who gets the short-time loan, either on a chattel mortgage or a mortgage covering his homestead, pays 8 per cent. The difference of 2 per cent is the cost of doing business. There are no commission charges. Business is done at actual cost, the borrower paying a charge of $1 for making out the papers, $1 to the county for recording them, and 25 cents for a notary's fee, for acknowledgment.

The company takes its money out to the borrower. It does not wait for him to drive to Colorado Springs, a distance of anywhere from 30 to 50 miles. As soon as the food shortage information began to filter thru to the farmers. County Agriculturist W. H. Lauck called attention of the Farm Loan Company to the need for aid to new settlers. Meetings were called at which John Lennox, general manager of the loan fund, made plain the details of the plan for advancing cash to those who expected to increase their acreage. On a request for "hands up" a number announced their desire for a loan. Others remained after the close of the meeting to privately make known their wants.

The county agriculturist was in position to give information regarding the character of the applicants, having observed them from the time of their coming into the county. It was a matter of listing their wants and discussing the question of the security. Those wanting amounts of $200 or less gave chattel mortgages. On requests above $200—and they went all the way up to $700—the land was to be security.

But how about the homesteads on which no patents have been issued? That is one of the strong features of the El Paso county plan. The loan company will "take a chance" on the homesteader under a provision in the regulations reading as follows:

"A mortgage by the entryman prior to final proof for the purpose of securing money for improvements, or for any other purpose not inconsistent with good faith, is not considered such an alienation of the land as will prevent him from submitting satisfactory proof. In such case, however, should the entry be canceled for any reason prior to patent, the mortgagee would have no claim on the land or against the United States for the money loaned."

Federal Farm Loans Slow

If these new settlers had title to their land they could be admitted to the Federal Farm Loan Association for permanent financing, tho that would not help them with this season's crops, because the government has been too slow to meet the emergency. It is true, unfortunately, that private enterprise is quicker to act when the test comes.

Now what happens is this: the Farm Loan Company tides the settler over until he can make final proof and then he pays off the private short-time loan with money advanced under the Federal Farm Loan Act on ten, twenty or forty years' time, or whatever period he may choose.

In other words, the Farm Loan Company of El Paso county is the preparatory school for the National Farm Loan Association, for it does business on a slender margin, teaches co-operative action and looks after the borrower to see that he spends the money judiciously.

Here is a list of one settler's requirements which were approved by the loan company:

Settlers' Requirements

10 acres Sudan grass	$ 4.00
200 lbs. of seed millet	1.00
500 lbs. Pinto beans for 40 acres	50.00
Potatoes for one acre, home use	15.00
4,000 lbs. of corn	120.00
4 tons hay to carry cows thru till grass comes on	80.00
Provisions for family for 5 mos.	75.00
Fencing, buildings, etc., to put the ranch in shape	170.00
Total	$515.00

This applicant has about 90 acres already in cultivation; he has four good mules and plenty of implements; and has cows so that he can sell cream.

Could Double His Acreage

"If I can get about $500 I can double my acreage of crops," he told the officer of the loan company. He has not proved up on his homestead, but was willing to give a mortgage on the land and on some of the chattels. Without this accommodation he would have to rely on the country merchant to carry him along for provisions until his next crop comes in, and he would not be able to put in any additional acreage without money to buy seed. He was eager to sign a note due on or before one year at 8 per cent for this accommodation, because he could figure on wiping it all out next fall, in addition to cashing in big on beans. With only a fair season his forty acres of Pintos should bring him a gross return three times the amount of his loan and he will have forage and grain enough to carry his cows thru the following winter. He will not only add to his own prosperity, but will be doing the country a service by producing a valuable food crop. He might have found a banker willing to stake him on the same terms, but he would not have gone to town to hunt up the banker, because he harbored the fear that is in the heart of most farmers new in a country that he would be turned down.

When he found a group of business men sending their representatives to offer him the accommodation he promptly took advantage of it. The chances are that the next time he wants a short time loan he will be a customer of some bank; his credit will have been established and it will be plain sailing. And finally after he has proved up on the homestead his permanent financing will be cared for thru the Federal system at the 5 per cent rate.

The matter of financing the farmer is not so much unwillingness on the part of the country bank, but lack of an agency, such as El Paso county has, to carry the initial risk and see the homesteader thru the first two crop years. The country bank can pick an individual here and there, but it does not possess the organization or the mobile funds for financing new settlers on a wholesale plan. Perhaps the efforts of the Ways and Means Committee of the Colorado War Council will succeed in the present emergency, in loosening up the strings, at least for this season.

The El Paso county plan, as before stated, is a permanent one. While the fund is being used this season primarily to increase production of food crops, the object is, also, to stimulate livestock production, both as to quantity and quality. Applications are being received from farmers who want dairy cows; others want hogs; a few want beef stuff. The Farm Loan company will advance the money to finance the farmer and the county agriculturist, with the assistance of a committee from the farm bureaus, will select the stock, which is to be bought on the community plan, in carload lots.

Farmers' Club Meeting

One day during April I attended a meeting of the Monument Farmers' Club, in the northern part of El Paso county, at which the improvement of livestock was discussed. There is need for purebred dairy sires in the community. Investigations made by the farm management department of the Agricultural College brot out that the farmers were not getting the returns in cream that they should have, cost of feed considered. It was not a question of prices. The creamery was that day paying 46 cents a pound for butterfat in cream and 52 cents a pound in whole milk. But the cows were not producing the quantity that the farmer who feeds intelligently has a right to expect. It was plain that the trouble was in the cows and not in the feed, the care, or the price of butterfat.

The farmers realized it. They had no dispute with County Agriculturist Lauck on that point. They wanted to know what to do.

"Let's first find out just where we're at," said Lauck. "You had a cow testing association once in this territory, but perhaps it took in too much territory. From Castle Rock to Colorado Springs is a pretty big stretch. You farmers know how to test your own cows. Why not do it? I'll furnish the barn sheets and tell you where you can get the books, so you can weigh the milk and the feed and keep a record of it. The creamery man told you he would make your tests for butterfat free of charge, so why not get at it? How many of you want to go in for testing your herds, so that we can arrive at a result that will tell us accurately which breed is best for our conditions? Then we can get sires on the community plan and breed up our herds."

Eight hands went up and a committee was named to see others who might want to join in the movement. For the next six or eight months the cows in the Monument district will, therefore, be under scrutiny. There will be a race between the milking Shorthorn, the Holstein and the nondescript, and may the best breed win. There will be a nice lot of butcher stuff sold in that community in about six months, and about the same time some good grades will come in from the older dairy states, a few purebred sires will come along with them, and by and by the milk producer will get full returns for his feed.

Preliminary to this movement is the calf club project, which the sons of these farmers will look after. It was an encouraging sign to have the fathers take this up for discussion and appoint a committee to act jointly with a committee from the Eastonville Farmers' Club, to determine just how many boys—and girls—in the two communities can take care of a calf. The two clubs want to buy a car of dairy calves for this work.

Lauck told them about a pig club over in the southeast part of the county, among the homesteaders. He said he couldn't do anything in the hill country this year with the pigs, but he did want them to know about the project out on the plains. A breeder of Durocs is furnishing seven purebred gilts to as many boys, the selection of boys to be made by the county agriculturist. He picked them from last year's corn club winners, on the

(Continued on page 6)

Junior Farmers of the Monument, Colorado, District
Left to right: Back Row—Frank Barnhart, Grant Boling, Stoddard Millwright, Loren Cole, Edward Cole. Front Row—Harry Barnhart, Fred Millwright, John Barnhart, Gritt Abbott.

Work of the U. S. Bureau of Markets

PLANS OF THE COLORADO DIVISION ARE OUTLINED

W. H. Kerr
Field Agent in Marketing, U. S. Department of Agriculture

W. H. KERR

IN STUDYING the marketing conditions thruout the United States one cannot help but be struck with the enormous amount of ignorance and misunderstanding on the part of the general public, farmers, and some legislators with reference to market derlying our present system. Many untrue statements have been sent broadcast, most of which have been swallowed by the unsuspecting public. There seems to be a general feeling that the whole marketing system is cumbersome and wasteful. The result of this is that many impracticable and unworkable schemes are being proposed, especially at this time when food products are unusually high. Hardly a day passes but what some scheme is proposed which, if put into practice, would revolutionize our present system and which, if closely studied, would be found entirely unworkable and uneconomical.

Many people think that the principal difficulty is that we have too many middle men. Our system of handling business is such that various functions of each of the transactions incident to production, to the time products are in the hands of consumers are performed by specialists. This is an age of specialization, and only thru specialization can we secure the greatest efficiency in the handling of our business. The time has passed when one or two men can perform all the functions from production to consumption, as was true in the earlier days when each little community was practically self-sustaining and the products used by that community were raised or produced in the immediate vicinity. Our middleman system of handling agricultural products is an illustration of the use of specialists. For instance, take the marketing o fwheat. There is no agricultural product which is handled in a more efficient way and at a smaller margin tban wheat. We find agencies engaged in the marketing of this product in its various stages which are specialists, devoting their activities to one or two functions in the long chain of marketing.

There is ample justification for the middle man. There may be too many in some cases, in others probably there are not enough. For example, there is no doubt but that considerable saving could be had if we could establish co-operative delivery systems to handle the food distribution in our cities, eliminating the duplication of expense which our present methods entail. The many schemes which are advanced for the elimination of the middle man by direct marketing from producer to consumer stand little chance of success. * * *

The demands of tho public that the present methods be improved have resulted in legislation by the federal government and also by state governments. The federal government was probably the first to take definite action. An agency was created, the primary purpose of which was to gather and disseminate information with reference to the marketing of farm products, in the hope that improvements could be made in our present system, and especially to furnish reliable information which would be of assistance in marketing and distributing the farm products of the country. The office of markets and rural organization was established in 1913 in the Department of Agriculture. The office since its creation has carried on numerous studies and investigations with reference to the marketing of farm products, paying particular attention to the more acute problems. While this office has been in existence but a little over three years, a large amount of very valuable work has been done and the results accomplished have assisted in a great many ways in getting at some of the more acute problems. * * *

Congress a year ago appropriated a sum of money to the office of markets to be used in co-operation with the state agricultural colleges in conducting marketing work in the states. Under this authority an office was created in Colorado, to work in co-operation with the extension division and the experiment station of the state of Colorado, this office to be known as the Colorado Division of Markets, with headquarters in Denver.

One of the principal activities of this division will be to act as a branch office of the market news service of the federal department at Washington in distributing information with reference to marketing conditions thruout the country. A telegraphic news service is being conducted on certain of the more perishable products, such as strawberries, onions, tomatoes, melons, peaches, apples and potatoes.

The Colorado Division of Markets is now issuing telegraphic reports on strawberries and onions, and giving shipping information on asparagus, cabbage and tomatoes. These reports are distributed by mail to all those requesting them.

At this time the Colorado division is carrying on two investigations, one relating to the marketing of Colorado poultry products, the other the marketing of Colorado dairy products. It is hoped from information secured from these studies to offer suggestions to the trade, producers and others with reference to possible improvements and render assistance in carrying on an educational campaign which will foster these industries in the state, bringing about increased production and more efficient marketing and distribution. It does not seem reasonable to believe that Colorado cannot raise enough poultry products to supply her own demand. And yet Colorado is importing yearly large amounts of poultry and eggs. It is the desire to find out just what quantities are coming into the state and if there is not some way in which the poultry industry can be encouraged and brot to a point at least where it will supply the home demand.

It is also hoped that the division can be of assistance in bringing about uniform and standard packages for various agricultural products and especially perishables. Considerable work in connection with this subject has been carried on by the federal department at Washington.

A Profitable Way of Handling Sheep on the Farm

GOOD MONEY IN THE SMALL FLOCK FOR IDAHO FARMER

E. J. IDDINGS

THERE are many opportunities in Idaho for the economical and profitable handling of small flocks of sheep. An average climate for the state, neither extremely cold in winter nor excessively hot in summer, simplifies the problem of winter maintenance and makes for the growth of lambs in summer. Forage and feeds of all sorts, adapted to sheep, are produced in abundance at reasonable cost. On many farms sheep are needed as scavengers to clean up brush patches and take care of summer fallow and other forage waste material in lanes and fields.

A profitable future for Idaho agriculture is largely dependent upon diversification of farm practice. Livestock should be kept on many farms that have until now scarcely known the imprint of a hoof other than of work animals. Vast quantities of feed material had far better be fed to animals than hauled to market in the form of bulky crops. Average yields and net farm returns would be enhanced by animal production and the use of the manures in fertilization. Sheep are quite easily handled, are highly efficient in handling feeding stuffs, leave in their droppings one of our most highly valued fertilizers and could be introduced in small flocks to advantage on hundreds of farms of our state. A flock of sheep may be started at small expense; shelter is not expensive, and there is a double income from the mutton and the wool.

There are additional reasons why our western farmers should take up the farm-flock idea. As a range state, Idaho is probably at present the principal producer of mutton. The whole business, however, has been revolutionized. The range has been curtailed, early lambing has come to stay, more feed must be used in winter maintenance, and, because of an increasing nationwide demand for mutton with no corresponding increase in production, high prices are probably a permanent condition. Ewes worth from $3.00 to $4.50 per head a decade ago, now cost from $9.00 to $13.00 per head.

There is room for extension and further development of an industry which is apparently on a firm and stable basis with remunerative prices to reward the producer.

The Foundation

Those who have never handled sheep or have had but limited experience, should use grade ewes for the foundation flock. Ewes suitable for starting a flock may be had from other farmers in some sections. In other parts of the state good grade ewes can ordinarily be bought from range flocks at a reasonable price. Our range flocks in Idaho as a rule show the predominance of either fine or long-wool blood. In either case a good, pure-bred ram, of one of the breeds that combines a well developed mutton form with heavy fleece, should be selected to head the flock. The ewe lambs may be saved to increase the flock or replace those sold because of age or unsatisfactory performance. The continued discriminating use of good rams of the same breed, and rebuilding of the flock by retention of ewe lambs, result in rapid improvement, flock uniformity and a group of animals entirely suitable to the farm.

Care should be used in selecting ewes for the foundation. Many that can be obtained very cheaply are later found to be useless for a breeding flock. Common defects are broken mouths, infertility, spoiled bags and inferior conformation. Ewes are at their best at from 3 to 5 years of age, altho many retain their teeth and breeding power until from 9 to 12 years of age. From year to year ewes with broken mouths, or inferior conformation, or of unsatisfactory qualities as breeders, should go to the butcher and be replaced with ewes from the lamb crop or with drafts from other flocks. Unless ewe lambs are dropped in early spring and are unusually growthy, they are not bred to advantage until they are yearlings. Ewes for a breeding flock should have deep, low-set bodies, wide, level, straight backs; fine fleeces of considerable length covering the body evenly; strong legs; and neat heads of breedy appearance. They should also be vigorous and good milkers.

Offers Attractive Field

The pure-bred flock appeals to many farmers and offers an attractive field for those of some experience. Range sheep men call for a large number of pure-bred rams each year and as the advantages of sheep on the farm are more widely understood and thoroly appreciated there will be calls for pure-bred rams and ewes for use in building up farm flocks. As compared with grade flocks, greater experience is called for in establishing and managing the pure-bred flock. For the best success with pure-breds, the flock master should be well informed on the problems of animal breeding and have some knowledge of salesmanship of pure-bred livestock.

The sire, as in building other livestock herds, is more than "one-half the flock." He should be a pure-bred and an excellent individual. One can effect flock improvement by purchasing and paying well for carefully selected ewes. To secure marked excellence thru the ewes, the entire flock must be chosen with that end in view and the ram must at least measure up to the average excellence of the ewes. The quicker and cheaper method of improvement, however, is thru an unusually good sire, even tho he costs three or four times ordinary prices for rams. With reasonably good ewes the sire, if he is of the highest type, exerts a distinctly improving influence on all the offspring.

The farmer who is a flock master should look to heavy fleeces of quality, improvement in size (unless he be fortunate in selecting foundation stock), desirable conformation, early maturity, and good feeding qualities. Mutton is now the more important side of the sheep industry and one must look toward lambs that get size and condition early for the butcher. Marketing in spring or early summer not only enables one to turn invested money more quickly, but secures in addition a price much more satisfactory, as a rule, than can be obtained late in summer or fall. In looking thus well to the mutton side, wool must not be neglected, since ewe lambs are kept to supply losses or sales from the flock, and since the wool crop on farms where a great deal of feed is available and good management prevails, pays the cost of a year's keep of a ewe and leaves the lamb for net profit.

The desirable ram selected with the view of meeting the above suggestions should be of medium length, deep, thick, low set, with a straight, strong back. He should be well developed in all details of mutton conformation and have an excellent fleece. In addition he should have style, vigor, masculine bearing, and should conform as closely as possible to the standard set for his particular breed.—(From Bulletin 96, Management of Farm Flocks in Idaho.)

Growing Everbearing Berries

Three years ago J. L. Salladay of Arvada, Colo., started with one dozen Progressive Everbearing strawberry plants. Today he has 45,000 on his truck farm in the Clear Creek valley, all produced from the original planting. He is furnishing a part of the thousands of plants that are being shipped out by Western Farm Life to subscribers who have taken advantage of the subscription offer of 18 plants with $1 for one year, 48 plants with $2.50 for a three-year subscription, or 60 plants with $3 for three years, and 120 plants with $5 and a five-year subscription.

Mr. Salladay has found this variety a success under irrigated conditions in Colorado, at an altitude of over 5,000 feet. Last season from 1,000 plants set out about May 1st he took in $250 during the season, his berry sales be ginning about July 15 and continuing until the first zero weather about the middle of November. The fall snows did not stop the production of fruit. Not until the ground froze hard did the plants cease growing.

The following advice is given by Mr. Salladay to those receiving plants this spring:

"Set out the plants immediately on receipt, as there is no danger now of the ground freezing. Set them as deep as they have been set and be careful not to cover the crown. Pour water into the holes in which they are set, so as to give them plenty of moisture at the start. No mulching is needed. Cool, wet weather will not hurt Progressive Everbearing strawberries; they are hardy. Covering with a mulch is more apt to smother them than to do them good. Mulching, if done at all, should not be done until after the ground freezes in early winter. I don't us a mulch on my plants at all.

"I set mine in rows three feet apart and 24 inches apart in the row. They will fill in all the intervening space the first year. Some set them closer and some further apart, but I find this about right. I don't bother the runners at all. The first year I get most of the berries off the runners. I don't pick off any of the blossoms either.

"My plants are set out before May 1st, so that they are well rooted by the time hot weather comes. I givo them lots of water. When they are in bearing I irrigate them about three times a week. In town care should be used in watering them not to use the nozzle on the hose. If they are subjected to pressure all the pollen washes off and they will not bear.

"The Progressive Everbearing does well in most any ki ndof soil, but best, of course, on rich ground, well fertilized. Do not use fresh manure, but plenty of well-rotted manure mixed with the soil is fine for them. In the city where manure is not to be had bone fertilizer is good."

How One Community Is Meeting the Food Shortage

(Continued from page 4)

theory that a boy who knew how to grow corn ought to have pigs to breed and fatten. The boys take care of the gilts the first season and at the proper time the breeder will lend a boar to the community, to be used by the club members in turn. The offspring is then to be divided equally with the breeder furnishing the gilts, he to take half of each litter and the club member to keep the other half, along with the sow. The breeder is paid off in pigs and the boys thus become hog raisers without the expenditure of a cent, except care and feed. The work is carried on under the county agriculturist's instructions. It will be continued with a litter contest the second season and the third probably the home curing of meats. These boys will still grow corn, under contest rules, as they are expected to produce the feed for their pigs. The county agriculturist had twenty applications for the seven pigs.

The Monument Farmer's Club heard the story with pleasure. Their own boys and girls have made records in club work. They have the state potato champion, who came to the meeting. There were a dozen other boys there for a conference with Mr. Lauck in regard to club work. P. A. Kirton, one of the teachers of the Monument school, offered to supervise a tract of ten or fifteen acres of corn for the summer, to be grown by community boys, and to be put into a silo, which the boys are to build; each boy to grow his own feed and to have his proportionate share of the ensilage to feed to the calves which are to be handled on the club plan.

"'That's the right spirit," was Mr. Lauck's comment on this suggestion.

It is the spirit that pervades the entire community as a result of the organization of the Farmer's Club, of which C. C. Garret is president and Ralph Walker secretary. One of the accomplishments of the club is the securing of a bank at Monument. For years the farmers have had no bank nearer than 20 miles. Often the stores are unable to cash their checks and the course of business is hampered. A farmer calls at the store, buys something and offers a cream check in payment.

"Sorry I can't give you all cash in change," says the merchant. "I'll have to give you my check for part of it." The farmer pockets the check, and in a few days is back in town paying it back to the merchant for more goods. Nobody is out anything by the transaction, but there is something lacking—well, I guess it's the jingle. The farmer is like the rest of us; he likes the sound of silver in his jeans.

So when the organizers of the bank asked the Farmer's Club for an endorsement of their proposition it was readily granted. The new bank is reciprocating by offering to finance the calf club movement.

Nothing was said about increasing production at that meeting of the Monument Farmers' Club, but much was said about improving production and cutting the cost of production thru better seed and better stock. Every farmer in attendance was aware of the food shortage. Before and after the meeting the talk was about seed potatoes, seed corn, seed beans—any and everything that might give them a chance to put in more food and feed crops.

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Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and thru the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Must Pay for Road

A owns a square piece of land. B owns a piece that surrounds it half way. Can B legally give a seventeen-foot road to his land? B has pastured the road for the last three years. The road has been there quite a number of years and B bought the land from two different parties.—J. S., Spanish Fork, Utah.

A undoubtedly has right to obtain ingress and egress to and from his land, not necessarily from B unless B's land entirely surrounds A's. In any event, if A desires road to his land he must pay for it.—Peters & Barker, Denver, Colo.

Horse Has Colic

Will you please send me something for a horse that has the colic?—G. A. Farnham, Utah.

The trouble with your horse is caused from indigestion. Change the feed if possible and observe special care in giving him only feed that will keep the bowels open and in good condition. For a time you had better discontinue concentrated feeds and give mashes and some succulent feeds such as roots if you have them.

Smut in Broomcorn

Will you kindly give me a formula to prevent smut? Will the same formula prevent the smut on broom corn and cane or will it take a separate recipe for each?—A. C. D., Elkhart, Kans.

The formalin treatment for smut in grains will apply also to broom corn and cane seed. Use one pound of formalin to thirty gallons of water. Soak the seed for one hour and dry thoroly before planting.

Raising the Ensilage

I have read considerable in your paper about pit silos and should like to know more, which is the object of this letter. How is the ensilage taken out? What kind of cutter is used in filling them?—D. G. H., Oxford, Idaho.

The most common practice is to use derrick and windlass for raising the silage. In regard to the kind of cutter to be used in filling, that depends very much upon size of the silo. You do not need a blower for filling a pit silo. The most practical outfit for the average farmer is a 12 to 14-inch cutter operated by a small gas engine. Instead of a blower such as is used in filling a high silo, a short piece of carrier may be used to take the silage over the curb of the pit. In many districts where pit silos are in use half dozen or more farmers combine in buying machinery for cutting and filling.

Plans for a Dugout

Please give me a plan for building a dugout for storage of crops on a dry land farm.—V. B., Denver, Colo.

I am at a loss to know whether you are thinking of a place to store away winter supplies for the family, or whether you mean a place to store crops to hold for a better market. A good cheap cave for storing supplies for the winter can be made as follows: Build an adobe wall one foot high around a space 12x12 feet, leaving an opening at one end for a door and at the other end for a window. Then dig out on inside of wall to a depth of 6½ feet from top of wall. Now place two by fours on side walls for plates. Bridge over doorway and window opening in end walls with heavy timbers. Now use five 2x8x14 for roof joists, spacing them equally and raising the middle one 8 inches higher than the plates and the other in such position that a board sprung over the middle joist and nailed to plates will be in position to nail to all the joists. Now fill up the space between ends of joists with adobe, dig out the entry way and you are ready for a roof. Use good one-inch boards, preferably shiplap, and cover this with good grade of tar paper, or rubberoid, then cover with a foot of dirt. The entry may be built up so that the door can be opened without stooping, or it may be slanted just enough to run the water off. Now to make this complete it should be cemented on the sides with two good coats of cement plaster. Use cellar sash for window. This should be kept covered in extreme cold weather. There should be a door at the bottom of the entry as well as at the top. Cement may be used for walls instead of adobe.—J. W. Adams, Superintendent Experimental farm, Cheyenne Wells, Colo.

Bog Spavin

I have a 1½-year-old filly which the veterinarians say has bog spavin. She has what I call wind puffs on both hind legs. The joints are puffed out as big as a good sized fist. The veterinarian says it won't hurt her and he says that there is no cure for her. Is there any cure? She had the spavin once, when she was 6 months old. She is not lame. Some recommend caustic balsam. What do you think about it?—H. E. L., Idaho.

I think your veterinarian was about right when he stated that there was no permanent cure for this ailment. It is brought on by sprain or bruise or other injuries. You might try the following treatments: Applications of cold water to the affected part and a lotion made of two tablespoonfuls of acetate of lead in a quart of water. If the above treatment does not give relief, try the following: A blister made of one teaspoonful of biniodide of mercury and four tablespoonfuls of lard rubbed on with the fingers and repeated in ten days and continued for some months. Wash the parts having received the blister 24 hours after application. It is advisable to tie the horse's head while the blister is on so that she cannot bite the part.

Faulty Teeth

Have a mare that slobbers most all the time. I think her teeth are bad and am 65 miles from a veterinarian. Can anyone with good judgment and the proper tools dress a horse's teeth, or does it take experience?

What ails a cow when she teases the bull, but won't stand for him? Have had a cow in that condition for over a week now. Her calf is 27 days old.—W. A., Fruitland, N. M.

If it is not convenient for you to secure a veterinarian and you have the proper tools, there is no reason why you should not operate on your mare's mouth and get her teeth in condition.

Your cow will adjust the matter of service in due time herself.

Locoed Horse

I see an inquiry in Western Farm Life of March 1 from C. B., El Paso, Colo., wanting a cure for a locoed mare. Please give him this and let him continue for a couple of months if necessary: Give strychnine from ½ to 1 grain in feed. If given hypodermically, give 1-50 to 1-100 part. Give either way twice a day. Also ½ oz. Fowler's Solution of Arsenic in water twice a day; both can be given at the same time. The arsenic can be put in the drinking water and mare can be watered out of a bucket. I have had good success with the above. C. U. Strong, Mora, N. M.

No Cure

I have a young mare that was worked in a log team two years ago. When thru with her, in the spring, the top of her neck was quite sore—we doctored it until it seemed to be getting all right, then turned her out in the range. When we rounded up in the fall she had a running sore on top of her neck and there seemed to be a pipe in it. Had a "would-be" horse doctor, and he undertook to burn it out with caustic, and he sure did. She began swelling up on the brisket from her forelegs back for 18 inches. After the pus formed, we opened it on the edge of the brisket between her front legs. It afterwards broke on each side about a foot back of her front legs. These ran for the most of last summer and finally healed. The place on her brisket has always run a little. The fore part of this winter we have been using her chiring around, and she apparently has caught cold and swelled up and one side has broken open again. Think the other side will break, as it is swollen quite badly. Her neck looks completely well. Can you advise me what to do?—R. R., Pitkin Co., Colo

I judge that there is very little hope of affecting a cure in this case. Unless you can secure perfect drainage it will continue to form pus. I believe the most economical way would be to kill this animal.

Mare Has Worms

Will you please inform me what is the best remedy for worms in a six-year-old mare? They are the long intestinal worm and do not seem to be very numerous, but the mare is poor in flesh and has rather a rough coat, tho she has good feed.—L. R. B., Cheyenne Wells, Colo.

Give your mare a teaspoonful of pulverized arecanut in her feed every other day. This will doubtless destroy the worms.

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Our Cover Picture

Conditions for spring plowing were fine when the earth was turned up by B. C. Cassell on the Engel place, southeast of Denver, early in April. The picture shows Mr. Cassell plowing stubble. Spring wheat has since been drilled in. The farm is under irrigation.

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How Everybody Can Help

Upon entering the present war, there is perhaps not a single individual, even boy or girl, who cannot do some effective work in behalf of the country. Only a few can go to the navy or the army, but everyone left at home can perform some valuable service. War makes heavy demands upon every resource. Armies must be fed and clothed and furnished with munitions. Navies must be built and maintained. Transportation becomes unusually important. Factories are needed worse than in times of peace, and none of these can be kept going without food. Only a small proportion of the population can actually go to the battlefield. The patriotic duty of the bulk of the population is to furnish the supplies. In this war this is truer than ever before in the history of civilization.

It will not only be necessary for us to grow plentiful supplies for our own men, but the allies now fighting in the trenches must look to this country for the materials needed by them.

At such a time it becomes the duty of every citizen to do his best in order that this may be accomplished, the strenuous work ahead of us should be divided up according to the capabilities of the people. With the enthusiasm now evinced, unless effort is well directed, much time and labor will be lost. All the glory will not be on the battlefield. Old men and boys can do signal service on the farm and ranch. Women's clubs can add to the food supply by preserving and canning materials that have heretofore gone to waste. Boys' and girls' clubs can do similar work and there is probably not a single person who does not know some practical, sensible way in which he or she may assist in this emergency.

Through national, state and local organizations the work can be correlated so that no effort is lost and that the greatest efficiency possible will be brought to bear during the trying days to come.—E. M. Ammons.

What the Cow Can Do

A 1,200-pound steer, ready for market, contains only about 360 pounds of actual food. A dairy cow at two years of age, begins to produce and yield daily thereafter about 900 pounds of edible nutrients in the year, and will continue to produce the same amount for seven years thereafter; that is, she produces during her actual life 6,300 pounds of human food. It takes 17 steers to produce the same amount of human food as a dairy cow produces in her lifetime. The steer, before he pays for any of his food, is in debt to his master for two years and upon payment ceases to live, while the cow pays for her food daily as she goes. (These figures are taken from a Minnesota University bulletin.)

Recently the U. S. Department of Agriculture issued a bulletin on the food value of milk and milk products, showing milk to be an economical food even at 15 cents a quart.

"In energy-giving power," says the bulletin, "one quart of milk is equal to 11 ounces of sirloin steak, or three quarters of a pound of round steak, or eight and one-half eggs, or 10.7 ounces of fowl."

Then there is the question of fat. A two-year-old steer ready for market contains about 280 pounds of fat. A fair dairy cow will produce in 6,000 pounds of milk per year 300 pounds of fat yearly for seven years, or a total of 2,100 pounds.

We need the beef, and production in that line must be increased. But how much greater is the need, as well as the advantage of an increase in dairy production, when results to the world's total store of food are considered. Add to that the fertility that goes to the soil from a dairy herd and the ready cash that goes into the pocket of the dairy farmer for every gallon of his product as soon as delivered, and there need be no further argument in favor of more good cows on western farms.

Yet, President M .D. Munn of the National Dairy Council calls attention to the fact that our stock of dairy cattle is lower today per thousand of population than it has been for forty years.

We can grow the roughage and grain needed to make the proper type of cow produce at a profit. Milk is the surest crop we have for our dry land farms. Roughage never fails; we can all have pit silos; we can usually produce enough grain; pasture is plentiful and often free for the summer months. So in the rush for beans and wheat money don't overlook our best bet, man's best friend, the cow.

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Fixing of Food Prices

The Secretary of Agriculture, in response to a telegram regarding the fixing of prices of food products, made the following reply:

"Your telegram received. No agency now has power to fix prices of food products. Have suggested that congress confer power on the government to fix minimum and maximum prices if the emergency requires them. The object of a minimum price to producers would be to stimulate production of certain staple products by assuring farmers that these products would not be disposed of below a certain level which would give them a reasonable return and would not cause them to suffer loss in any event. This would have to be done under proper regulation. The shortage of important crops in this nation, the greatly depleted resources abroad, and the waste and destruction in Europe should cause a continuance of remunerative prices, but as an additional assurance to farmers the power indicated ought to be vested in the government. It is not suggested that maximum prices be fixed to producers, but that power to fix such prices governing the distribution of products be given to the government to be used if necessary to control uneconomical speculation and manipulation in handling of food products. It is of the first importance that no step be omitted greatly to increase the supply especially of the great staple food products of the United States in every direction."

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High Prices Will Last

Whatever may be the result of the agitation for the establishment of a food dictatorship in this country, one point remains settled—the cost of living will not be lower during the present crop year. There is no possible chance for cheaper meat, and the bread situation undoubtedly will become more serious. Action taken by the Denver Livestock Exchange a short time ago in reference to meat production is significant. In addition to urging the producer to make the fullest use of all roughage, pasture and grain in breeding ,raising and finishing stock of all classes the Exchange raises a warning voice in regard to the question of price fixing. The meat producer cannot be expected to feed and finish stock at a loss, and consequently price fixing, should it come to that, must take into account the cost of feedstuffs In the last analysis the price of bread governs the price of meat. As wheat goes, so go other grains.

At the present time speculators are reaping the harvest of high wheat prices, and the stock farmer is paying them for hay and grain for his cattle. The situation is one that must be judiciously handled. The interests of the consumer must be weighed against those of the producer; production must be increased, but it cannot be unless the producer has a chance to make a fair margin. This clearly indicates that there is no prospect for any lowering of the cost of living. We must rearrange our program to meet the high prices, which will prevail so long as the war lasts. Any cutting of the cost will come thru reduction of quantity consumed.

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Horses Needed by the Army

The passage of the selective draft measure by congress makes certain the immediate preparation and equipment of an army of at least a million men in 1917. All preparations are being made for a war that will last three years, for regardless of what civilians may think, army officials do not expect an early ending to the war into which the United States has been drawn.

The requirements of cavalry, infantry and artillery regiments in horses and mules are set forth in a letter just received by the writer from the War Department, Washington, D. C., to be as follows:

Cavalry Regiment: 1,541 horses, 152 draft mules, 29 pack mules, 6 riding mules.

Infantry Regiment: 69 riding horses, 112 draft multes, 25 pack mules, 6 riding mules.

Artillery Regiment: 1,097 horses, 88 draft mules, 4 riding mules.

These are minimum requirements, and do not take into account transportation trains required to forward supplies from terminal points to field bases. In other words, the number of animals specified above refer only to those actually needed with the troops.

The war strength of a regiment of infantry is approximately 1,500 men; of a regiment of cavalry approximately 1,300 men; of a regiment of artillery consisting of six batteries of four guns each, approximately 1,146 men. While definite information as to the proportion of infantry, cavalry and artillery to be included in the new army is not yet forthcoming, it is generally understood among army officials that an artillery battery of four guns will be allowed for each 1,000 infantry. It seems probable, therefore, that the first million men placed under arms by the United States will be composed of 500 regiments of infantry totaling 750,000 men; 125 regiments of artillery totaling 143,250 men, and 100 regiments of cavalry totaling 130,000 men, making a grand total of a little over 1,000,000 men. The proportion of artillery certainly will not be less, and may be more, as actual warfare on European battlefields has demonstrated that overwhelming superiority in the artillery branch of the service is essential to efficient operation by the infantry.

It may be argued that there is no probability that the United States will prepare 100 regiments of cavalry, but in view of the danger from the Mexican situation, it appears to be the belief of well informed army officers that at least that many cavalry regiments will be provided for in this year's mobilization.

To equip 500 regiments of infantry will require 34,500 riding horses, 56,000 draft mules, 12,500 pack mules, and 3,000 riding mules. One hundred and twenty-five regiments of artillery will require 137,025 horses, 10,000 draft mules, and 500 riding mules. The equipment of 100 regiments of cavalry will necessitate 154,100 horses, 15,200 draft mules, 2,900 pack mules, and 600 riding mules. The total number, therefore, required for the equipment of 500 regiments of infantry, 125 of artillery, and 100 of cavalry, will amount to 325,625 horses and 100,700 mules.

The army has at present only 70,000 head of horses and mules. This means that approximately 350,000 head of horses and mules must be bought within the next six months. No information has yet been received from the army authorities in regard to how the purchase of these horses and mules will be made.

It must not be forgotten that the allied nations are still in the market, and will continue to be. Their need for horses and mules is as great as for guns and ammunition; indeed, even more so, because they can manufacture the guns and ammunition in their own countries, but their resources in horses and mules have already been exhausted, and the United States is the only source from which they can obtain additional supplies. Eight hundred and fifteen thousand one hundred and sixteen head of horses and 289,062 head of mules have been exported, practically all of them for war purposes, during the thirty months ending March 1, 1917. In spite of the shortage of ships, 40,000 head of horses and mules were shipped in January, 1917, and more than 27,000 head in February, 1917.

It is incumbent upon us, if we are to maintain our resources so as to effectually back up our armies and maintain maximum production on our farms, to see that every good mare is bred to a first class stallion this season, and that every effort is made to save the foals that will be coming within the next six weeks.—Wayne Dinsmore.

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College Silo Campaign

The extension department of Colorado Agricultural College, thru Director H. T. French, announces a series of silo meetings to be held in every county on the eastern slope beginning about the middle of June. It is to be presumed that farmers are planning a large acreage of forage crops, such as corn, sweet sorghum and the grain sorghums, in order that the production of meat and milk may be increased. Advice along this line has been sent broadcast by the extension department. The silo campaign is in the nature of follow-up work. For the plains region pit silos are particularly recommended, as they may be constructed at a minimum cost of materials and labor. Following is a list of counties and towns at which meetings are to be held, the exact dates for meetings to be announced in our issue of June 1st:

Weld County—Grover.
Logan County—Sterling.
Sedgwick County—Julesburg or Sedgwick.
Morgan County—Fort Morgan.
Washington County—Akron.
Yuma County—Yuma, Wray, or both.
Adams County, Arapahoe County—Bennett.
Elbert County, Lincoln County—Limon.
Kit Carson County—Seibert, Burlington, or both.
Cheyenne County—Cheyenne Wells.
Crowley County—Ordway.
Otero County—Rocky Ford.
Phillips County—Holyoke.
Bent County—Las Animas.
Prowers County—Lamar or Holly.
Baca County—Springfield.

A Correction

In the April 15th issue of our publication there appeared an advertisement of The Armco Iron Culvert and Flume association in which was stated that "Armco Iron is never less than 98.84 per cent pure." This should have been "99.84 per cent." The error was made, not thru any fault of ours, but thru a mistake in the making of the plate furnished by the advertiser.

The association has asked us to make this announcement correcting the error and, feeling their request to be a reasonable one, we are publishing this paragraph.

Comment by Farmer Putnam

TELLS ABOUT HIS TRIP OVER THE DIVIDE TO ATTEND A FARMERS' CLUB MEETING

Denver, May 10, 1917.

DID you ever hear about the Divide country? Well, maybe you have, but it won't hurt you to know a little more. Leavin' Denver fur Colorado Springs we have to go right over the divide. You keep a-goin' up all the time till you git as fur as Palmer Lake, 51 miles south, starting at Denver with 5,200 feet and landin' on top at 7,200. Then leavin' the lake you drop down a thousand feet in the next twenty-five miles to the springs. This big hump that you pass over is the divide between the Platte and the Arkansaw, and it runs out from the mountains like a spur in the shape of a fan.

Well, the country on the slopes of this divide is different from any I ever was in. It ain't mountain and it ain't plains; it ain't prairie and it ain't timber country, but kind-a betwixt and between, with ridges and swales, medders and groves, creeks and springs, good farmin' land and lots of fine pasture.

Now them experts tells us that certain crops don't do well above a certain line, but the divide country has got a habit of foolin' the experts. I seen pinto beans, the finest kind, growed at 7,000 feet; seen Sudan grass about the same altitude; seen corn as high as 7,500 feet, and wheat, oats, barley and rye as good and better than was growed lower down. It's funny about the climate in this high country. Sometimes it snows in June, but the snow don't do no damage; ag'in I seen it come in September, but it didn't hurt the grain any, fur the next day's sun ripened it right up as good as ever. When you git up about a mile and a half above the foot of the Statue of Liberty rules made by the weather men and farm experts ain't no account. Things just grow because they want to grow regardless.

About two weeks ago when I was travelin' over the divide I seen snowbanks two feet deep and right beside of them was sand lilies and anemones in bloom. People down east cain't understand how that's possible. We don't understand it neither, but we know it's so. They is lots of things man has to take on evidence when he sees it, even if he don't believe it's true.

Now you don't need to think this country is a regular Greenland, fur it ain't. You kin go up there lots of times in January and they won't be no snow on the ground and the sun shining bright and cheerful. Most of the snow comes in late fall or in spring, just like the spring rains back east. Then in summer they has afternoon showers that keeps the growin' things fresh and green, with the hot sun the rest of the day to force 'em along fast. It's wonderful to see how things grows. It's like Alaska, where they has 18 to 20 hours of sunshine a day in summer and the plants hustle to beat the frosts.

The divide is fine fur spuds. I wrote somethin' about potatoes not long ago, and a lady kicked and stopped her paper because she said I was tryin' to make fun of the Irish. Bless you, lady, I love the Irish, because they kin take a joke. I ain't got no right to offend the Irish or any other nation, because I'm one of them Americans which is a mixture of all kinds, and I never know when I'm pokin' fun at any race of people whether I'm a-hittin' my ancestors or not. It's a good thing to be a American. You're like the mule—without pride of ancestry. You cain't point to no long line of forefathers, maybe, but you kin thump yourself on the chest and say: "I belong to the race that produced George Washington and Abe Lincoln. I don't know where I came from, but I'm johnny on the spot when there's anything doin'."

Changin' the subject back to potatoes. The divide is a natural potato country and they grow 'em without irrigation, big and mealy. Them farmers kin make their country a great potato seed district because the growers on the irrigated lands has to renew their seed every so often.

Most of the money the farmers gits comes from sellin' milk and cream. It's a fine grass country, plenty of range in the hills, plenty of corn raised fur silage and dry fodder, and small grains to feed with them.

I went up with Lauck, the El Paso county agent, and Mr. Brown the ad man fur the El Paso County Democrat. I've wrote up Lauck a time or two, and while I ain't told all I know about him by half, I think I've said plenty fur publication. I ain't the kind that'll bawl a man out in print on matters that the public hadn't ought to know. I meet all of the county agents more or less and I got to use my judgment about what I say. They is one thing I haint told about Lauck, and that is about his new boys' and girls' club, with five members, all home talent. It ain't every county agent that kin have a club in his own home with such a big enrollment. Some of 'em haint even got a start, and then they goes

(Continued on page 11)

Free Strawberry Plants

Not Too Late to Plant Everbearers

You can set out Everbearing Strawberry plants as late as June 1, and still be assured a good crop of berries by August 15. Already we have supplied our readers with over 40,000 free plants and if you have not sent for your plants don't delay doing so as this will be your last opportunity to secure them.

Hundreds of our subscribers who have already received their plants from us will testify as to their vigor and hardiness and their special adaptation to the Rocky Mountain states. Here is what two of our readers have to say about our plants:

Loveland, Colo.

Received plants in fine condition. Enclosed money order for $2.50 to renew my subscription for three years.—Mrs. C. H. Showalter.

Idaho Falls, Idaho.

The 120 plants arrived today in good shape. They are fine, hardy plants, and will grow well here. Enclosed find check for $5.00 to renew my subscription for five years.—J. H. Peterson.

OUR FREE PLANT OFFERS

A one year's subscription will get you 18 Everbearing Strawberry plants, enough to start a single bed. A three-year subscription, 48 plants, enough to start a double bed. A five-year subscription, 120 plants, enough for a big plot three rods square.

Subscription—	Plants	Amount
One year	18	$1 00
Three years	48	2.50
Five years	120	5.00

Extra—We have a limited number of Strawberry Plants of a $1,000 variety. While they last one plant will be included with a three-year order, and two with a five-year order.

Use the coupon below to send your order, or simply fill out and mail us the card we sent you. We guarantee safe delivery and full instructions as to planting and care will accompany your plants.

ORDER COUPON

Western Farm Life,

1402 Arapahoe St., Denver, Colo.

Gentlemen: I want to try some Everbearing Strawberry plants this spring. I am enclosing $....., for which send me.....plants and WESTERN FARM LIFE for..... years.

Name .....

P. O..... State.....

We prepay transportation only on 120 plants.

The Eyes of America Turned on Her Farmers

AT last the American farmer occupies his rightful place in the esteem of the world. Manufacturers, merchants, bankers and city dwellers of all kinds heretofore have taken their food for granted and have overlooked the man behind the plow—the man who feeds them.

Conditions today are such that the *producer* of foodstuffs is recognized as the mightiest force—not only in the welfare and prosperity of the nations of the world but in the very existence of nations and their peoples.

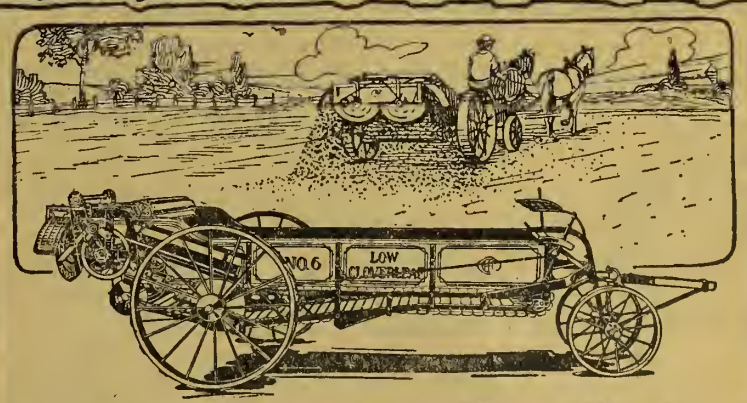
A noticeable feature of the situation, which has shown the American farmer to be on a high moral plane as well as holding an important industrial place is the fact that he has *not* taken advantage of conditions to extort unreasonable prices from his fellow Americans. He has patriotically increased his production in order to prevent famine prices instead of keeping production down to force prices up.

He has shamed the food speculator—though unfortunately his example has not been followed by all manufacturers—particularly among the makers of so-called luxuries; though many big manufacturers in this country have followed the farmer's lead.

One of the most noticeable cases among those who have kept faith is that of the makers of Coca-Cola. In spite of the enormously high price of cane sugar—the principal ingredient of Coca-Cola—and in spite of the higher cost of its other ingredients the Coca-Cola Company have not raised the price to consumers nor lowered the quality of that delicious and refreshing beverage one iota. Like the farmers they have kept faith with the people to their own cost.

Perhaps the lessons of fair-dealing and helpfulness that the heads of that institution learned as boys on the farm (for they are products of the soil) have strengthened them to stand firm in this crisis. So let us remember that the beverage Coca-Cola, known as the National Beverage because of its great popularity, has proved itself indeed national by doing its bit to keep down the cost of living.

F6



Wide Spreading Pays Best

WHEN you have looked them all over, you will probably decide to buy a wide spreading **Low Cloverleaf, Low Corn King** or **Low 20th Century manure spreader.** These machines break the manure up into very fine pieces and spread it evenly. They spread beyond the tracks of the rear wheels. The width of the spread is adjustable. Manure goes further and does the soil more good when spread with a **Low Cloverleaf, Low Corn King** or **Low 20th Century** machine.

These wide spreading machines with load leveler are by long odds the most popular spreaders ever brought out. We find that the better work our spreaders do the more we sell. Join the crowd and buy a **Low Cloverleaf, Low Corn King** or **Low 20th Century.**

If you will drop us a line, we will send you complete information and also tell you where you can see these machines.

International Harvester Company of America
(Incorporated)

Crawford, Neb. Denver, Colo. Helena, Mont. Los Angeles, Cal.
Portland, Ore. San Francisco, Cal. Spokane, Wash. Salt Lake City, Utah

Dairying and Hog Raising

GEO. E. MORTON

Free advice on the commercial or technical features of dairy farming and hog production. Please address your letters to DAIRY DEPARTMENT, WESTERN FARM LIFE, DENVER, COLO.

Seven carloads of high grade Wisconsin dairy cattle have just ben distributed among the farmers of Montezuma, La Plata, and Garfield counties. These cattle were secured thru co-operative work of County Agents E. D. Smith and R. C. Allred, the local bankers, and the state dairy commissioner. Purchases were made thru a committee consisting of one representtive of the banks and farmers interested, and the commissioner's fieldman, H. C. Nevius, who is a practical and well-trained dairy cattle judge, and who has been instrumental in selecting and placing many carloads of cows among Colorado farmers, both from eastern and local markets. Mr. James Bowles was the representative from Garfield county, and Mr. George Harrison from Montezuma and La Plata counties.

All purchases were made as nearly as possible upon direct orders from the farmers. In this way, the problem of distribution on delivery was simplified, as was also the matter of getting what each individual farmer wanted. Each animal was tagged with the number of the farmer who had ordered an animal of that type and price. From one to eight head went to each farmer participating in the shipment; and two-year-old heifers were recommended and preferred in the majority. To insure future herd building and better bred stock, seven pure-bred bulls were brought in with the shipment.

In all cases the utmost care was exercised to get the very best grade of dairy cattle obtainable at prices paid. All cattle were bought direct from the dairymen who had raised them, and not thru dealers, who are often addicted to advancing prices considerably and selling low grade stuff. In so far as possible, previous records of the herds from which animals were gotten, were obtained from market returns, or other sources, so as to guard against low producers.

The good results shown by the production of the dairy cows placed last year has brought the farmers to desire additional stock of the same high grade. The steady profits derived from dairying and its ready avenue of market for hay and feeds raised is bringing about more diversified farming in these Western slope districts where fruits and other once-yearly return products have been so largely raised.

In making the many purchases and investigations of sale prices for the many carloads of good dairy cattle that have been secured for Colorado farmers through the agency of the state dairy commissioner, it has been found that this spring's prices have advanced from 20 to 30 per cent over selling prices last fall, where cows have been bought in the eastern dairy districts. The larger part of this rise is due to generally advancing prices and increased demand; but the general tendency is for the northern and eastern dairymen to keep larger herds during the summer months when rich pastures are at hand, and then to dispose of surplus stock in the fall, just before time for them to go into barns and winter quarters.

High prices of feeds where purchased and contrastingly low prices of market milk have caused many dairymen in and around the larger cities of this state to dispose of part or all of their herds at very reasonable figures; but in so many cases, herds of cattle to be sold are of such poor grade, good pure-bred sires not having been used in herds, that at best they are a gambling buy for any farmer, and more often dear at any price, if they are to be used for dairy purposes.

Do field peas and barley do well in Arapahoe county? How much ground planted to field peas and barley would be required to fatten off two hogs?—E. H. L., Englewood, Colo.

Answer: Peas should go in at once in order to do well in Arapahoe county. They must be well advanced before hot weather. It is best to sow them just as soon as the ground can be worked in spring—in February even—if you can get on the ground then. An acre of peas and barley giving a good yield should produce 400 pounds of pork. A half acre will take care of your two hogs.

I am very anxious to learn something in regard to a breed of cattle known as the Ayrshires. Have been watching the advertisements of livestock in your paper but have failed to see anything said in regard to them. Can you give me the address of someone in this state that is raising them? Or better still, give us a writeup of this breed of dairy cattle. I am so situated that I would like to try to get a good dairy breed that are good rustlers, hardy and larger than the Jerseys. I am told that they are a fair beef as well as milk stock.—J. F. M., Holyoke, Colo.

Answer: The Ayrshire cow is particularly well suited to conditions in the eastern part of Colorado. She is hardy and a good rustler, inheriting those traits from her Scotch forbears, who graze on the mountains, thru

Wood Churns Unsanitary

Send for our literature on our new steel Churns. Absolutely sanitary, easy to clean, made of seamless heavy steel. will last a life time.

BEATRICE CREAMERY CO.

Dept. 10, Denver, Colo.

CREAM WANTED

Ship your cream direct to the creamery and you get much better returns than by making butter or selling to your local station. All new shippers who mention this paper will receive above illustrated

MILK STRAINER FREE

Write today for prices.

GINGRICH PRODUCE CO.

1250 Curtis Street DENVER, COLO.

Only $2 Down

One Year to Pay!

$24 Buys the New Butterfly Jr. No. 2. Lightrunning, easy cleaning, close skimming, durable. Guaranteed a lifetime. Skims 95 quarts per hour. Made also in five larger sizes up to No. 8 shown here.

30 Days' Free Trial Earns its own cost and more by what it saves in cream. Postal brings Free catalog, folder and "direct-from-factory" offer. Buy from the manufacturer and save money.

ALBAUGH-DOVER CO. (12) 2129 Marshall Blvd. CHICAGO

100,000 now in use

A Continuous Performance

"I have not missed a single milking since I installed the EMPIRE Milking Machine May 23rd, 1915," writes E. F. Gentry of Wallace, Idaho.

We quote Mr. Gentry, not because his experience is anything unusual but because it is like that of all users of

EMPIRE MILKING MACHINES

It is very important in buying a milking machine to select one that has this record, for a milking machine is used twice a day, and one that is not so constructed that it will be constantly "on the job" means loss of milk, time and money.

EMPIRE Milking Machines are simple and efficient—gentle and natural in their action, and above all, they milk the SAME WAY EVERY DAY—more uniform in action than even the calf. They safeguard the condition of valuable cows.

Let us tell you ALL the benefits they offer you. Write for Catalog 28 and also ask for information regarding EMPIRE Cream Separators, Gasoline Engines and Electric Plants.

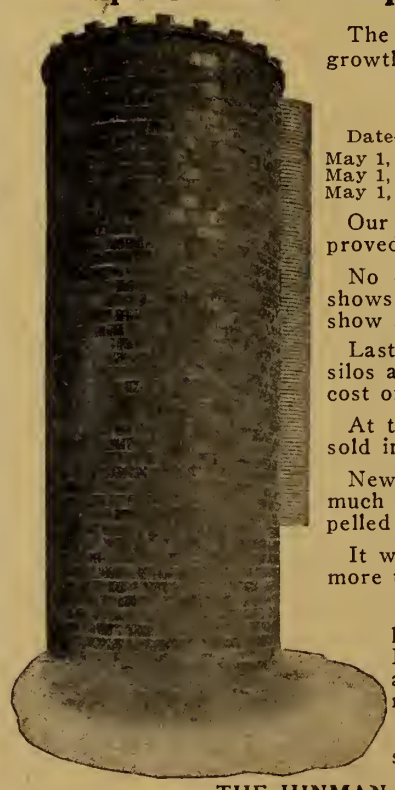
The best recommendations for Empire Milkers that we have seen have come from users. They will interest you. Send for our illustrated pamphlet "What Dairymen Say."

EMPIRE CREAM SEPARATOR COMPANY

Bloomfield, New Jersey

Chicago—Denver—Portland, Ore., Montreal—Toronto—Winnipeg, Canada

Important to Prospective Silo Builders



The following is a statement of the growth of our business for two years:

Date—	Number Silos Sold	Amount	Increase Over Preceding Years
May 1, 1915.....	31	$11,917.00	.....
May 1, 1916.....	54	24,984.00	118%
May 1, 1917.....	110	56,205.00	121%

Our VITRIFIED TILE SILOS have proved superior to all others.

No other silo concern in this territory shows such an increase and most of them show a loss.

Last fall we purchased material for 150 silos and based our prices for 1917 on the cost of this material.

At the present rate the 150 silos will be sold in two more weeks.

New material now being purchased costs much more money and we will be compelled to raise prices on all later sales.

It will be impossible to get material for more than 200 silos this season.

If you want what EXPERIENCE has PROVED the BEST SILOS BUILT, get your order in. If you act at once you will get in before the raise.

Booklet, free for the asking, describes this type of silo thoroughly.

THE HINMAN SILO COMPANY

1650 Champa St., Denver, Colorado

neather and gorse, during the summer months, and are brought thru the winter on straw and neeps (turnips), with a little oil cake to enrich the ration. Grain feeding of dairy cows, as we practice it, is unknown among Ayrshire breeders in Scotland. As a result the Ayrshire cow produces milk without leaning up against a grain trough to do it.

The Ayrshire has not the extreme high records held by the breeds better known in this country, but her advocates claim great uniformity of production, that is, while there are no extremely high producers, neither are there any exoremely low producers. In other words, the herd average will equal that of any breed; whether this is true I am not prepared to say, but it is at least true that the Ayrshire is bred to greater uniformity of body type than any other breed. They are symmetrical in outline, have the most regular and beautifully shaped udders of any breed, and carry more flesh than most dairy breeds. The breed has the fault of crankiness, and this combined with sharp upstanding horns is inclined to develop cows who are barnyard bosses. All that is necessary to overcome this is to dehorn them.

The old type of Ayrshire had short teats, but the modern type has gotten away from this fault. It is a good idea to watch out for it.

The Agricultural College at Fort Collins are the only breeders in the state maintaining pure-bred Ayrshires, in so far as I know.

REDUCE FUEL COSTS ONE-HALF

FOR FORDS AND ALL OTHER CARS

START EASY IN COLDEST WEATHER! MORE POWER AND ONE-HALF MORE MILEAGE!

Air Friction Carburetors use cheapest grade gasoline or even half gasoline and half coal oil with excellent results.

Over 250,000 enthusiastic users!

Start your car instantly and move off at once, while motor is cold (even zero weather), with no "spitting," "popping," or "missing." In other words, end your carburetor troubles.

AIR-FRICTION CARBURETORS

Newly Perfected Model for 1917

If your dealer cannot supply you, write or wire us at once, sending his name and the name and model of your car.

30% off list price where no representative is already appointed.

Ask us about our 30-day trial offer.

Dealers, garages, and repair shops make greater profits and give more satisfaction supplying AIR FRICTION CARBURETORS, and spark plugs, than on any other accessory they can handle.

THE AIR FRICTION CARBURETOR CO.

216 Madison St., Dayton, Ohio

Manufacturers of carburetors for pleasure cars, trucks, tractors and motor boats.

Show this adv. to your dealer or repair shop

$16.50 Sweep Feed Grinder. | $21.00 Galvanized Steel Wind Mill.

We manufacture all sizes and styles. It will pay you to investigate. Write for catalog and price list.

CURRIE WIND MILL CO.,

610 E. Seventh St., Topeka, Kansas

Dairy News Notes

Dairymen, farmers and business men of La Junta are doing splendid team work toward securing a condensary from Libby, McNeil & Libby. F. M. Thompson, general fieldman for that company, has made a thoro investigation of local conditions, and the number of dairy cows now available for the supply. The local banks have agreed to loan money for the purchase of dairy cattle at 7 per cent interest. La Junta is a good location for a condensary and its building would make an additional home market for more Arkansas valley alfalfa, and prevent its soil fertility being shipped to eastern markets in box cars.

"The Commercial" reports that "a calf club has recently been formed at Newdale, near Rocky Ford, and that thru the co-operation of the First National Bank of Rocky Ford 100 Holstein heifer calves have been purchased and distributed among the boys and girls." This means future dairy development for that district, and that members of the club will be actively interested in the farm.

The Johnstown Cow Testing Association has completed its first month. Members and tester are exceedingly well pleased with the bright outlook for the association work in that district and the part it will play in the further successful advancement of dairying.

The Boulder County Cow Testing association started May 1 with F. B. Schroeder, an experienced and up-to-date dairyman, as tester and adviser of the association.

Mr. J. B. Nichols of Bristol has recently purchased an 800-acre ranch north of Sugar City and is now making rapid strides in developing it as a modern dairy farm. A new dairy barn is under construction and plans are laid for an up-to-date farmstead. A systematic crop rotation will be followed to furnish feed for the cows and to build up a high state of soil fertility.

Comment by Farmer Putnam

(Continued from page 9)

around tellin' the farmers to increase production! Boys, charity begins at home.

Now about that feller Brown. I put him down as a hustler as quick as I seen him. I didn't know just why I took to him so till he said the magic word "Missouri!" Yep, he's from my old state, and he knowed a lot of my old friends down to Columbia, includin' Bill Nelson, Walter Williams, Prof. Eccles, Kempster, J. Kelly Wright, and other statesmen and professors. Brown come out to Colorado fur his health a year ago and he's gained forty pounds. He's pickin' up so fast that he might have to go back east and git some more malaria germs to take off the surplus. Hustle sticks out all over that boy. The farmers up around Monument where we stopped fur a meetin' all seemed to know him and give him the glad hand.

We met some of our old friends at the meetin', including Ralph Walker, secretary of the Farmers' Club; Mr. Steppler, Mr. Pribble, Mr. Judd, Mr. Mangus, Mr. Garrett and lots more. They was talkin' about organizin' a calf club and one of 'em wanted to know if I didn't want in, but I told him I was too old.

They is just one thing about them Farmers' Club meetin's that I don't like. I been to a lot of 'em since I come back out here last summer and I notices that the wimmin folks sticks in the back room, where they has charge of the lunch, and the only time the men pays any attention to 'em is when it's time to eat. Of course I ain't fur cutting out that part of it; the grub is the best part of the programs; but why don't the men invite the ladies into the meetin' after dinner and let 'em help discuss milk prices, feeds, silage and them other things? They is just as much interested as the men, and when they ain't no special speaker fur the ladies they ought to be in the general meetin' havin' their part in the program. If this war keeps up they may have to be doin' some of the field work, and then we'll wish they knowed more about farmin'. Give 'em a chanct, men. I don't believe in bein' selfish if the wimmin wants to help us in our work. I'll buy a pair of overalls fur Josephine—that's my wife—any time she makes a bluff about don' field work.

THOMAS JEFFERSON PUTNAM.

Use nitric acid to kill warts on pigs. One application is usually sufficient.

To prevent jellies and preserves from molding, place a spoonful of lime in the pantry where they are kept.

PATRIOTISM DEMANDS

That All Butter-Fat Waste Be Stopped

President Wilson's powerful appeal for the conservation of the nation's resources is still ringing in our ears. "The supreme need," he says, "of our own nation, and of the nations with which we are co-operating, is an abundance of supplies, and especially of food stuffs;" and again, "Upon the farmers of this country, therefore, in large measure rests the fate of the war and the fate of the nation."

Wasteful methods must be abolished. Every device that makes for the saving of time and labor on the farm must be utilized. Every plan that makes for the conservation of our food products must have the farmer's hearty co-operation.

And nowhere is there greater opportunity than in the production of dairy products, particularly butter-fat.

"Fats, fats, fats, more fats," that is the demand of the warring nations in Europe. The men who toil and the men in the trenches must have fats. They are the fuel that the human machine must have.

And no fat is so palatable or so easily assimilated as butter.

When it was simply a question of the farmer's own loss of profit, the tremendous waste of butter-fat on American farms was bad enough, but under present conditions such waste is nothing short of criminal.

And it is wholly unnecessary.

It is conservatively estimated that about a million cow owners in the United States are still skimming milk by some wasteful "gravity" method.

At an average of four cows to the farm, and an average waste of thirty-five to fifty pounds of butter-fat per cow, all of which could be saved by the use of a De Laval Cream Separator, this alone represents an annual waste of at least 140,000,000 pounds of butter-fat.

Then there are, perhaps, a million inferior or half-worn-out separators in use whose owners could save fifteen to twenty pounds of butter-fat per cow per year by replacing such machines with New De Lavals; and this represents another waste of at least 60,000,000 pounds of butter-fat annually.

Also there is the loss of time and labor that a De Laval would save and which could be better devoted to other productive work on the farm. This waste is hard to compute, but it is almost as important as the loss of butter-fat.

These are startling statements, but any dairy or creamery authority will agree that these estimates of waste are really very conservative.

Shall this tremendous waste continue? Will the loyal American farmer permit such waste when he appreciates the duty that is laid upon him to conserve the one article of food that above all others is necessary to the life and health and energy of the men who serve the nation in the field, the factory, the mine—and soon in the trenches?

We have always had an abiding faith in the American farmer, and we believe that if he is made to appreciate the full purport of the President's appeal to him, the appeal will not be in vain; and when he further appreciates what the De Laval can do to save the butter-fat which is now being wasted, and that his patriotic duty demands that such waste be stopped—NOW—our plants will not be big enough to take care of one-half the demand for De Laval Cream Separators.

THE DE LAVAL SEPARATOR COMPANY

165 Broadway, New York 29 E. Madison St., Chicago

The Farm Home

MRS. H. T. FRENCH

Questions about home problems promptly answered by letter and thru the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

The Bread Question

How triumphant every woman feels when she has mastered the ability to supply her family with good bread. And now we must realize that none of this good bread is to be wasted and that economy is not stinginess, as so many people seem to think. It is, however, just now a real art to be able to utilize all the scraps, odds and ends, to buy what is needed and nothing more. One of our readers says, "A crust saved is a crust earned."

Did you have a little chicken left from the Sunday dinner? If only two tablespoons, when carefully separated from bone and gristle, chop it fine, cover with 1½ cups water and boil, and thicken it slightly with corn starch in melted butter (flour can be used in place of cornstarch). Pour over nicely toasted bread and serve hot for a luncheon dish.

Dry Toast

For dry toast, have a bed of hot coals and toast your bread carefully so that it will not burn. Spread with butter and serve immediately.

Cream Toast

After toasting and buttering your bread, pour just enough hot milk over it to soften it and then pour on ½ teacup of cream. Delicious to anyone, but particularly tempting to one who is not feeling up to standard.

Milk Toast

Lay toasted slices in vegetable dish and pour over them milk that has been thickened as for thin white sauce, with a tablespoon of butter added to it. Cold sliced boiled eggs may be added to this nourishing dish.

Griddle Cakes

Very dry bread or crumbs when soaked in cold water, make delicious griddle cakes. For about two quarts of batter use one cupful of crumbs with water sufficient to cover, one egg, sour milk enough to thin, one teaspoonful of soda and flour to stiffen.

French Toast

This is a favorite dish for lunch or tea and is easily made when desirous to use up stale bread. Beat two eggs with a pint of milk and dip the slices of bread into it. Fry a golden brown on a well-buttered gridiron. Serve with syrup or fruit juice slightly thickened.

Crisps

These may be used for soup or with coffee for breakfast. The crisps can be made of dry biscuit cut in thin slices, or small squares of bread nicely browned in the oven. They are also very nice under creamed chicken in place of freshly made biscuits.

Dressing

For dressing to stuff fowls dip slices of dry bread in cold water and break into small pieces. Add flavoring of sage, a little salt, melted butter, and one or two eggs. Eggs may be omitted and the mixture moistened sufficiently with a little milk or water.

Bread Crumb Balls

Soak one cupful bread crumbs in cold water until perfectly soft; mash with spoon until smooth; add salt and three eggs; beat all together. They must be stiff enough to drop from spoon and form little cakes; fry in hot lard and butter together.

(Note: In the next issue we will tell how to make dainty desserts from dry bread.)

"Good cooking," says Ruskin, "means the knowledge of all the herbs and fruits, and balms and spices; and all that is healing and sweet in fields and groves, and savory in meats. It means carefulness, inventiveness, watchfulness, willingness and readiness of appliance. It means the economy of your great-grandmother and the science of modern chemists; it means much tasting and no wasting; it means English thoroness, French art and Arabian hospitality; it means, in fine, that you are to be perfectly and always ladies (loaf-givers), and you are to see that everybody has something nice to eat."

It is indeed a pleasure and satisfaction to hear from so many readers and the requests for help in the organization of Home Clubs for study and work, and for talks on the value of the Woman County Agent and Boys' and Girls' Garden and Canning Clubs will be met as rapidly as possible.

Queries and Answers

Please write something concerning value of lemons as food.

Answer—In regard to medicinal properties the lemon surpasses both the orange and the grape fruit. Used as lemonade, made with water containing carbonic acid gas, it is very refreshing and may be efficacious in gastric disturbances. The juice is beneficial for the prevention and cure of tonsilitis. It is also much used in gout and for this purpose several lemons should be taken daily. According to Darwin and Buffon, monkeys are in the habit of eating lemons when not feeling well. Fruit acids, such as those of the lemon, are not injurious but useful and much more healthful to use than vinegar in making salads. The lemon peel is very pleasing grated into cakes or sauces and will not be bitter if careful not to use the white just beneath the outer skin.

Please write recipe for cake frosting that will be light, soft, and not crumble.

Answer—The following is tried and found very good: Two cups sugar and one-eighth teaspoon cream of tartar mixed; one-half cup cold water, cooked until it hairs when lifted on tip of fork. Add to stiffly beaten whites of two eggs and then beat into it nine marshmallows cut into small pieces. Spread on cake as soon as of right consistency not to run. It is better to put it on the cake while the cake is still warm, not hot.

Have you a good recipe for orange marmalade?

Answer—In making orange marmalade the writer uses the recipes found in the Boston Cooking School Cook Book and finds them very good. They are as follows: Select sour, smooth-skinned oranges. Weigh oranges and allow three-fourth their weight in cut sugar. Remove peel from oranges in quarters. Cook peel until soft in enough boiling water to cover; drain, remove white part from peel by scraping it with a spoon. Cut thin yellow rind in strips using a pair of scissors. This is more quickly accomplished by cutting thru two or three pieces at a time. Divide oranges in sections, remove seeds and tough part of skin. Put into a preserving kettle and heat to boiling point, add sugar gradually, and cook slowly one hour; add rind and cook one hour longer. Turn into glasses.

An article on eggs will be written for June 1st.

Supply your home library with the following bulletins by addressing Boys and Girls Club Work, U. S. Dept. of Agriculture, Washington, D. C.:

"Plant a Garden," N. R. 1.

"Home Gardens; Vegetables to Grow and How to Grow Them," N. R. 3.

"Seeds and Plants for the Home Garden," N. R. 2.

"Canning of Soups and Meats," N. R. 26.

"Common House Canning Difficulties," N. R. 29.

"Home Canning Club Instructions to Save Fruit and Vegetable Waste," N. R. 24.

"Recipes for Canning Vegetables, Their Preparation for Table Use," N. R. 30.

Farmers Bulletin No. 818, "The Small Vegetable Garden."

Write at once for with people all over the United Sattes calling, the supply may soon become exhausted.

On Home Canning

In one of the issues of Western Farm Life I saw where a woman wanted recipes for canning vegetables. I have always had success the way I can and they are sure a help when things are so high.

PEAS—I pick my peas in the morning as soon as I dare go into them, shell them and try not to get any blossoms or anything in them as they must be clean. Then I wash them thru cold water, put them in a sack and pour boiling water over them, putting the sack in a jar or pail, so they can be covered with a lid, let them stand ten minutes then take out and dash in cold water out of which you fill your jars. I use all old-fashioned Mason jars, fill up with fresh water, add teaspoon of salt to a quart, place in a boiler with a false frame so they won't touch the bottom or each other, fill to the necks with water and when they come to a boil, boil two hours and a half. Seal out of the water while hot, turn upside down till morning. Put them in the cellar in a dark place.

CORN—Cut off the cob and press in the jars till the milk raises over the top. Place rubbers and lids on and boil for two hours and a half. Always have cans and lids well cleaned. I always boil my lids in soda water and then put in cold water. The main thing is to have your vegetables fresh. We farm women can surely do that, as we have our gardens handy.

CAULIFLOWER—Cut in pieces as for table use and fill jars; then fill with water, place on rubbers and lids and boil two hours and a half. It is best to use new rubbers for all vegetables.

You want plenty of water around your jars, but if you have a good boiler and lid you don't often have to add any if you are sure it is boiling do not pour directly on a jar.—Mrs. B. F. Carter, Moorcroft, Wyo.

PATTERN DEPARTMENT

All Patterns 10c each. Address WESTERN FARM LIFE, Pattern Department, 14th and Arapahoe, Denver, Colo.

2018—Splendid School Dress. Cut in sizes 6, 8, 10 and 12 years. Requires 3¾ yards 36-inch material for 8-year size. Serge mixed suiting, plaid woolen, repp, galatea, gingham, chambray, percale, linen and linene are nice for this model. The closing is at the left side. The sleeve may be in wrist or elbow length, either style having a simple cuff. The dress has square yoke sections, to which the plaited dress portions are joined.

1778—Simple, Popular Model. Cut in sizes 8, 10, 12 and 14 years. Requires 4¾ yards 44-inch material for 12-year size. This is a pretty style, easy to develop and nice for all kinds of wash materials. The skirt is full, and is gathered under a wide belt, where it joins the surplice waist. The collar is broad and outlines the deep neck opening. The sleeve may be in wrist or elbow length.

2024—Ladies' House Dress. Cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Requires 7 yards 36-inch material for 36-inch size. This design is good for striped seersucker, for checked gingham, repp, poplin, flannelette, linen, drill and other washable fabrics. The fronts are finished in coat closing and have smart pockets. The fulness is gathered at the waistline.

2034—Pretty Summer Frock. Cut in sizes 34, 36, 38, 40, 42 and 44 inches bust measure. Requires 8 yards 36-inch material for 36-inch size. Lawn, challie, batiste crepe, wash silk, and voile are nice for this style. The waist is cut low in front, outlining a vest of contrasting material, to which the collar is joined. The skirt is straight and gathered and finished with soft folds in front and deep cross tuck below the hips.

Tom—You're not turning as fast as Dad does, Mary.

Mary—No Tom, but I don't want to tire myself, and we'll get all the cream any way with this lovely new machine. Dad says:

"It Skims Clean at Any Speed"

All fixed-feed separator manufacturers ***know*** of the immense loss from turning their machines below speed—and ***admit*** it. ***Sharples speed needs no watching,*** owing to the wonderful Suction-feed, which sucks just as much milk into the bowl as the separating force can ***perfectly*** handle—and no more. The result is perfect skimming and even cream—at ***all*** speeds. For this reason the universal use of Sharples would save 80,000,000 lbs. of butter annually to the dairymen of America!

SHARPLES
Famous Suction-feed
"Skims clean at any Speed"
SEPARATOR

—the ***only*** separator that will skim clean at widely-varying speeds
—the ***only*** separator that gives cream of unchanging thickness—all speeds
—the ***only*** separator that will skim your milk quicker when you turn faster
—the ***only*** separator with just ***one*** piece in bowl—no discs, easiest to clean
—the ***only*** separator with knee-low supply tank and once-a-month oiling

Sharples has only half as many parts as most separators and ***each part is doubly well made!*** Over a million users! Write for catalog to Dept. 30

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Sharples Milkers—used on over 300,000 cows daily

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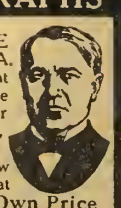

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DAISY FLY KILLER placed anywhere, attracts and kills all flies. Neat, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by dealers or 6 sent express prepaid for $1

HAROLD SOMERS, 150 DeKalb Avenue, Brooklyn, N.Y.

Farmers' and Stockmens' Exchange

Advertisements will be inserted in this department for 5c per word; four or more insertions, 4c a word each insertion. Remittances can be made by postoffice money order or personal check. Advertisements are set in uniform style, no display type or illustrations admitted under any circumstances. Every figure and initial counts as one word. Guaranteed circulation over 50,000 copies each issue. WESTERN FARM LIFE is issued semi-monthly the first and fifteenth of each month. Advertising copy for this department must reach us ten days before date of issue. It carries the most classified advertising because it gives you best results. Send us in a trial advertisement. Write for proof showing how these columns pay advertisers.

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WANTED—TO HEAR FROM OWNER OF FARM or unimproved land for sale. O. K. Hawley, Baldwin, Wis.

FOR SALE—SECTION NEAR CARR, COLO.; running water; ten dollars an acre. Milt Warner, Carr, Colo.

WANTED—TO HEAR FROM OWNER OF GOOD ranch for sale. State cash price and description. D. F. Bush, Minneapolis, Minn.

BUYERS, SEE THESE BARGAINS BEFORE you buy. Farms, businesses, any kind, anywhere. Send for free magazine. Western Sales Agency, Minneapolis, Minn.

STOCK RANCH, $1,900; IMPROVED; 200 acres; deep soil; timber; high schools; dry farming or irrigation. E. Hopkins, Nucla, Montrose county, Colo.

3 GOOD 320-ACRE RELINQUISHMENTS, ALL joining. Some small improvements on this land; lays level; 12 miles of town and railroad. Price for the three, $1,600 cash. Address Box 7, Arlington, Colo.

I HAVE SOME CASH BUYERS FOR SALABLE farms. Will deal with owners only. Give full description, location and cash price. James P. White, New Franklin, Mo.

IMPROVED QUARTER SECTION IN KIOWA Valley. Windmill, silo, 4-room house, barns, 40 acres broken, 10 acres alfalfa, $35.00 per acre. $2,000 cash, balance easy terms, 6%. Reynolds, Covey & Reynolds, 205 McPhee Bldg., Denver.

SOUTH CENTRAL TEXAS. MATAGORDA County, the rain belt, sure-crop county. No droughts. Can show now fine growing crops cotton, corn, luxuriant pastures. For land bargains address Magill Bros., Bay City, Texas. Live agents wanted.

PRODUCTIVE LANDS—CROP PAYMENT OR easy terms—along the Northern Pacific Ry., in Minnesota, North Dakota, Montana, Idaho, Washington and Oregon. Free literature. Say what state interests you. L. J. Bricker, 91 Northern Pacific Ry., St. Paul, Minn.

ONE OF THE BEST MOUNTAIN STOCK ranches in Northern Colorado; 1,120 acres of deeded land, besides outside range; good six (6) room house, with running water inside providing bath, toilet, etc. Good barns and corrals. Cuts about eighty (80) tons of hay yearly. John A. Webber, 1932 13th St., Boulder, Colo.

JUST RETURNED FROM SOUTH AMERICA—Arranged for million-acre grant; organizing settle company. Want members join organization who are given 2 000 acres and stock in company for less than five cents an acre. Want sixty to seventy members to go to work on ranch. Highest reference. Box Q., Sawtelle, Calif.

640 ACRES OF LAND IN KIOWA COUNTY, Colo. All nice, smooth land, two good sets of improvements. Nearly all fenced and cross-fenced; 100 acres in cultivation on the two half sections. Plenty of water and leased grass laying joining this section to run 300 head of cattle. Price on this is $6,400—a snap for the money. Address A. R. Thornton, Arlington, Colo.

WONDERFUL LAKESHORE STOCK FARM—244 acres blue grass and clover land in Polk county, Wis., with beautiful large building; 80 acres finest field, 20 ready to plow, 20 meadow, balance well fenced pasture with some hardwood timber. A splendid place for raising beef and mutton, and handily located. Snap, only $50 per acre; $3,000 down. Baker, G-208, St. Croix Falls, Wis.

GOVERNMENT LANDS

GOVERNMENT, STATE LAND—BARGAINS. Booklet free. Joseph Clark, Sacramento, Cal.

MONTANA HOMESTEADS—16,000,000 ACRES. 640 acres or 320 acres for you; circulars free. Homestead Bureau of Montana, Dept. 87, Box 845, Butte, Mont.

LAND—I HAVE PLACED OVER 400 FAMILIES in Weld county, mostly on homesteads and relinquishments. I know nothing desirable left open to entry, but can still furnish partly improved relinquishments or deeded lands at very low price. Call for list. Every statement guaranteed. Land shown by auto from Denver. Mackley, 1643 Champa, Denver, Colo.

POULTRY

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

PLYMOUTH ROCKS

BARRED ROCK EGGS 100 $4.00. MRS. Alex Sheridan, Kanopolis, Kans.

EGGS — BARRED ROCK, GOOD LAYING strain. Mrs. C. B. McCorkle, Albion, Neb.

CHOICE WHITE ROCK EGGS, $1.00 PER 15; $3.00 per 50; $5.00 per 100. Mrs. Anna Plotts, Geneva, Neb.

WINTER LAYERS—BARRED ROCK EGGS, $1-15, $4-100. Mrs. Lon Edwards, 1105 Garfield Ave., Loveland, Colo.

WHITE ROCKS ONLY FOR 18 YEARS. EGGS $1.00 per 15. $5.00 per 100. Josias Lambert, Smith Center, Kans.

PARTRIDGE PLYMOUTH ROCKS; FIRST prize winners Omaha Show; eggs, $1.50 per 15. Jno. W. Norton, Talmage, Neb.

WHITE ROCKS—BLUE RIBBON WINNERS IN 4 states. Write for mating list. Williams Poultry Farm, Cedar Bluffs, Neb.

BREADWINNER WHITE ROCKS—BLOOD OF 200 to 301 egg layers. Hatching eggs reduced to $1.25 and $2.00 for 15. Doble, 2434 So. Race, Denver.

BARRED PLYMOUTH ROCKS, EGGS FOR hatching from four choice pens. Send for mating list. Chester Blunt, Route 1, Greeley, Colo.

BARRED ROCKS—BUY EGGS FROM PRIZE-winning and laying strains; both dark and light matings; prices for eggs, $1.25 to $5.00 per 15; circular. Chas C. Lindamood, Walton, Kans.

WHITE ROCK EGGS THAT HATCH—FROM my mammoth birds. They are bred white and right. Good winter layers. Eggs 15 $2.00; 50 $4.50; 100 $8.00. Mrs. Austin Elvin, Jefferson, Iowa.

WHITE PLYMOUTH ROCKS—EXHIBITION and utility stock; eggs, $1.50 per 15, prepaid parcel post. Safe delivery guaranteed. T. O. Moon, Kingfisher, Okla.

BARRED PLYMOUTH ROCK EGGS FOR hatching, from heavy laying strain; also Silver Spangled Hamburg eggs at $5.00 per 100. Chas. Voss & Son, Hubbard, Neb.

BARRED ROCK SPECIALIST—PRIZE WINnings: Hobart, 1st, 2nd, 3rd, 4th cockerel; 1st, 3rd pullet; 1st pen; 2nd, 3rd cock; silver cup. Gold special, Okla. City, 1st pullet, bred pen. Eggs $3.00, $2.00-15, 100-$6.00. Fred Hall, Lone Wolf, Okla.

LEGHORNS

SINGLE COMB BUFF LEGHORN EGGS, $4.00 per 100. Ella Pittard, Route 1, Geneva, Neb.

SINGLE COMB WHITE LEGHORN BABY chicks, 10 cents each. Anna Hege, Sedgwick, Kans.

SINGLE COMB WHITE LEGHORN EGGS—English Barron strain. Baby chicks. F. B. Morger, Fowler, Colo.

TOM BARRON'S WHITE LEGHORN HATCHing eggs and baby chix, reasonable. Free circular. Andy Mikkelson, Utica, Neb.

THORO-BRED ROSE COMB BROWN LEGhorn eggs. $4.00 per 100. Mrs. J. T. Webber, Nemaha, Neb.

HEWITT'S S. C. BUFF LEGHORNS. EGGS, $1.00 per 15, 50 for $3.00, 100 for $5.00. Mrs. Philo Hewitt, Lexington, Neb.

S. C. WHITE LEGHORN EGGS, YOUNG AND Barron strain. $1.50 for 15. $6.00 per 100. C. D. Hitchcock, Eldon, Okla.

S. C. BROWN LEGHORNS; DAY OLD CHICKS, $10.00 hundred. Setting eggs, $4.00 hundred. Mammoth Pekin duck eggs, $1.00 setting. W. L. White, Altamont, Kan.

EGG-BRED, BARRON STRAIN, SINGLE COMB White Leghorns. Hatching eggs and baby chicks for sale. Write for catalog. The Rowley Egg-Farms Company, Palisade, Colo.

UNIV. PARK POULTRY RANCH—BABY Chix and Hatching Eggs. To every thinking breeder this wonderful line bred stock of thorbred, heavy laying Single Comb White Leghorns, which will reproduce themselves, bred to shell out eggs and do it. Our stock will grade your stock up and not down, because it is scientifically bred to do just that. Pullets, hens and cockerels hardy, free range, vigorous stock. Eggs, incubator lots or settings, guaranteed; eggs that hatch are eggs that pay; laid by hens, not pullets. You get the very egg you order. Chicks from 241-egg trapnest stock, $18 per 100; chicks from 200-egg Hoganized test, $15 per 100; prepaid to your express office in lots 30 or more; guaranteed live delivery; I also guarantee what I advertise. Personal inspection invited, or send for circular. 2520 So. Clayton, Denver, Colo. Phone South 337.

RHODE ISLAND REDS

ROSE COMB REDS—EGGS $5.00-100. CATHerine Recker, Dresden, Kan.

ROSE-COMB RHODE ISLAND REDS—100 eggs, $5.00. Redview, Irving, Kan.

CLASSY ROSE COMB REDS—EGGS, $1.50 TO $3.00. Baby chix, 15c each, $12.50 per 100. Mrs. Chas. Hill, Toronto, Kans.

EGGS? YES—SINGLE-COMB RED EGGS. Winning and paying stock; mating list. C. Bonsall Box C, Fairbury, Neb.

EGGS FOR HATCHING, ROSE COMB REDS exclusively; prize-winning, heavy laying strain. Write for mating list. E. A. Miller, Alma, Neb.

BIG MISSOURI RHODE ISLAND REDS, ROSE comb, 15 eggs, $2.25 from pen No. 1. Special pen, 15 for $5.00, prepaid and guaranteed. J. C. Guyer, Mandan, N. Dak.

FERTILE EGGS, HATCHING FINE; S. C. R. I. Reds, vigor, size, color; 700 winter layers; hen-hatched, farm-raised, $6 per 100; $50 per 1,000. Mrs. J. M. Erwin, Arvada, Colo.

HALL'S S. C. REDS AND WHITE ROCKS WIN again at the Great Denver Stock Show. Eggs, $1.50 per setting up. Mating list free. Stock for sale. Elston L. Hall, Gering, Neb.

SINGLE COMB RHODE ISLAND RED HATCHing eggs from deep, brilliant Red. Long back and low tail; $2.50 for 15 eggs and $1.50 per setting or $6.00 per 100 eggs. Mating list free. Nels W. Peterson, Mason City, Neb.

BRED-TO-LAY S. C. REDS—FINE, LARGE, hardy, hen-hatched, free range, heaviest winter layers; eggs, $1.00 setting; $2.50 fifty and $4.50 hundred, guaranteed. Belmont Farm, Topeka, Kans.

ROSE COMB RED CHICKS, 10c. Mrs. Alex Leitch, Parkerville, Kans.

SIX GRAND PENS ROSE COMB REDS, MATED to roosters costing $15.00 to $50.00; 15 eggs, $2.50; 30 eggs, $4.00; 50 eggs, $6.00. Pure bred range flock, $5.00 per 100. Baby chicks. Send for catalog. W. R. Huston, Americus, Kans.

ORPINGTONS

ORPINGTONS, WHITE OR BUFF. LIST FREE. Frank Lewis, Superior, Neb.

BUFF ORPINGTON EGGS, $5.00 PER 100. Mrs. Alma George, Denton, Neb.

PRIZE-WINNING SINGLE COMB BUFF ORPingtons; eggs, $1.25, 15; express prepaid. Carl Scherbacher, Guide Rock, Neb.

WHITE ORPINGTON EGGS FROM LARGE scored birds; $6.00 per 100, $1.50 setting. Otto Hampp, Beaver Crossing, Neb.

S. C. BUFF ORPINGTONS—EGGS $1-15; $3.50, $4.50-100. Fine winter layers. Blue ribbon stock. Mrs. Joe B. Sheridan, Carneiro, Kan.

CEDARDELL POULTRY FARM—S. C. BUFF Orpingtons, exclusively bred for size, color and eggs. $1 per 16, $5 per 100. Martha Brown, Parkerville, Kan.

EGGS—$1.00, $2.00 AND $3.00 PER 15 THE rest of the season. F. M. Shank, La Junta, Colo., State Vice-President National S. C. Buff Orpington Club.

SINGLE COMB BUFF ORPINGTON EGGS, $1.50 for 15; 8-pound hens, 13-pound cockerels; the kind that lays—the kind to sell. H. M. Wilkinson, Ansley, Neb.

WYANDOTTES

CLARY'S "CHALK WHITE" WYANDOTTES are winners. Egg orders booked now. $2.00 per setting, $8.00 for 100. Geo. Clary, Fairbury, Neb.

FARM RAISED WHITE WYANDOTTES—FOR over 30 years. Eggs, $3.00 per 100. W. Chinese geese eggs, 20c each. C. H. Beethe, Elk Creek, Neb.

PARTRIDGE WYANDOTTE—LAYERS AND prize winners. Eggs, $3.00 per 30. Mating list. Satisfaction guaranteed. T. Cline Lee, Elk City, Okla.

GOLDEN WYANDOTTES—WINNERS IN THE best shows; 200-egg strain; $1.50-$3.00 per setting; $8.00 hundred. Highland Poultry Farm, Fairbury, Neb.

BRAHMAS

MAMMOTH LIGHT BRAHMAS; EGGS, $1.00 per 15. A. M. Richardson, Altoona, Kans.

PURE-BRED MAMMOTH LIGHT BRAHMAS; 15 eggs, $1.00. Cora Lilly, Olivet, Kans.

EGGS—PURE-BRED LIGHT BRAHMAS; 15, $1.00; 50, $3.00; 100, $5.00. Mrs. Grace Buskirk, Pender, Neb.

MY LIGHT BRAHMAS AGAIN WIN SWEEPstakes in the big 1917 Denver Stock Show. Hatching eggs for sale; prices reasonable. E. Grosser, W. 23rd and Perry, Denver.

CORNISH

QUALITY DARK CORNISH, THE IDEAL FARM fowl. W. W. Officer, Fowler, Colo.

DARK CORNISH, PURE BRED, 15 EGGS $1.75. Ancona-15, $1.25, prepaid. Maggie Johnson, Peru, Kan. R. No. 1.

DARK CORNISH EGGS, $1.75 PER 15; PARTridge Wyandottes, $2.00 per 15; Blue Andalusians, $2.00 per 15; Houdans, $1.50 per 15. All prepaid. Satisfaction guaranteed. Mrs. L. A. Alexander, Route 1, Peru, Kans.

QUALITY DARK CORNISH. R. H. JANDEBEUR, Alma, Nebr.

HAMBURGS

SILVER SPANGLED HAMBURGS—FINEST laying strain. Eggs, $1.50 per 15, prepaid. Satisfaction guaranteed. Mrs. L. A. Alexander, Peru, Kans., Route No. 1.

MINORCAS

SINGLE COMB BLACK MINORCAS. EGGS $5.00 hundred. Claude Hamilton, Garnett, Kan.

SINGLE COMB BLACK MINORCA EGGS FOR sale. The large kind. Geiger and Whatglen stock. Satisfaction guaranteed. Ed Leach, Randolph, Kan.

PURE, LARGE, WHITE SHELLED S. C. BLACK Minorca eggs for hatching, $5.00 per 100, $3.00 per 50. Securely packed. Satisfaction guaranteed. Victor Hawkinson, R. B. 56, Randolph, Kans.

LANGSHANS

BLACK LANGSHAN COCKERELS FOR SALE. Margaret McClune, Wallace, Kan.

GET MY FREE MATING LIST OF CHICAGO and Madison Square prize winning Langshans. John Lovette, Mullinville, Kan.

BLACK LANGSHAN EGGS—LESS THAN 100-7c. Over 100, 6c. Baby chicks, 15c each. Mrs. Geo. W. King, Solomon, Kan.

BLACK SPANISH

WHITE-FACED BLACK SPANISH FROM THE best stock to be obtained in this country. Have sold out on stock, but can furnish eggs, $2.00 per setting, $10.00 per 100. W. W. Yale, Chickasha, Okla.

HOUDANS

HOUDANS—VIGOROUS, MAGNIFICENT BIRDS. W. D. Gay, Essex, Iowa.

DUCKS

ENGLISH PENCILED RUNNER DUCK EGGS, 15-$1.00. Joseph Kepple, Richmond, Kan.

FAWN-WHITE RUNNERS; 13, 75 CENTS; 100, $4.00. Mrs. Jno. Whitelaw, Lawrence, Kans.

RUNNER DUCKS AND POLISH EGGS, $1.00 setting. Undefeated; best. Ora Dubbs, Douglas, Kans.

FAWN WHITE RUNNERS; ELEVEN, 75c, POSTpaid in Colorado; 100, $4.00. Mrs. Baker, Arvada, Colo., Route 1.

BABY CHIX

50,000 PURE-BRED BABY CHICKS TO SELL, 10 cents each. Wanted, good, pure-bred eggs, premium above market price. Colwell Hatchery, Smith Center, Kans.

SEVERAL VARIETIES

DUCK EGGS, 75C PER DOZEN. GEESE EGGS, 25c each. Postpaid. Lawrence Mantey, Carr, Colo.

EGGS FOR HATCHING—MATING LIST FREE. S. C. Buff Orpingtons, Toulouse Geese, Indian Runner Ducks. Peter Brehm, Harvard, Neb.

EGGS — ALL STANDARD VARIETIES. Healthy farm flocks of good quality, color, size. Prices right. We stand by our name. Square Deal Poultry Association, Mrs. Fern Ogilvie, Sec'y, Beaver Crossing, Neb.

EGGS—WORLD RENOWNED "RINGLETS." New York prize winners past 20 years. Pens No. 1 both matings, $3.00 and $4.00; 15, $2.00; 50, $3.00; 100, $5.00. Pheasant, $4.00 dozen. Cockerels, $2.50. Harper Lake Poultry Farm, Jamestown, Kan.

ALL VARIETIES LAND AND WATER FOWL, imported stock. Winners of thousands of prizes. List free. Rose Lawn Poultry Farm, Beaver Crossing, Neb.

COLUMBIA HATCHERY—ALL LEADING VArieties of baby chicks, cockerels and hatching eggs. Reds, Rocks, Leghorns, Orpingtons, etc. Live delivery of baby chix guaranteed to your express office. We ship to all parts of Colorado, Wyoming, New Mexico. Write for price list. P. O. Box 1102, Denver.

EGGS, EGGS—FROM THOROBRED TURKEYS, geese, 8 kinds of ducks, Pearl and White Guineas, Barred, White and Buff Rocks, Houdans, Rhode Island Reds, Hamburgs, Games, White and Silver Laced Wyandottes, Leghorns, Langshans, Light Brahmas, Minorcas, Cochins, Buff and White Orpingtons, Bantams, also Hares, Rabbits, Guinea Pigs and Fancy Pigeons. D. L. Bruen, Platte Center, Neb. Write wants.

INCUBATORS

IT'S GOOD BIG HATCHES YOU WANT THIS year. Denver incubators are built and tested for this dry climate and positively do the work. Get our free catalog. Low prices, with freight prepaid. Coal heated colony brooders. Baby chicks and eggs for batching from purebreds. Denver Incubator Co., 177 S. Broadway, Denver, Colo.

PET STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

YOU CAN MAKE A GOOD LIVING IN YOUR back yard raising rabbits for us. We will pay you from $1.00 to $2.00 each for youngsters. Breeders furnished at reasonable prices. Send dime for contracts and circulars. Thorson Rabbit Company, Aurora, Colo.

LIVE STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

CATTLE

FOR SALE—DOUBLE STANDARD POLLED and Horned Hereford bulls. Wallace Libbey, Maxwell, N. M.

FOR SALE—ONE REGISTERED 15-MONTH-old Holstein bull and high-grade Holstein calves. Apply to Union College Farmer, Chas. A. Williams, College View, Neb.

HOLSTEIN CALVES—TWELVE HEIFERS AND two bulls, 15-16th pure, four to six weeks old, $18 each, crated for shipment anywhere. Fernwood Farm, Wauwatosa, Wis.

FOR SALE—REGISTERED JERSEY HERD OF the St. Lambert and Hood Farm breeding. Largest in size and production. Will sell bull calves very cheap. Excelsior Dairy, O. S. Larson, Prop., Fort Morgan, Colo.

HEREFORDS—15 YEARLING BULLS AND about 30 bull calves, all registered, and of the best breeding and individuality. Among the yearlings are three herd headers, also one 4-year-old bull by Simoon. All at popular prices in order to sell. J. O. D. Ranch, Aroya, Colo.

REGISTERED JERSEYS AND MILKING SHORThorns. Jersey herd headed by Maggie's Shy Duke, 140084, Grand Champion Denver Stock Show. Two nearest dams average 54 lbs. milk per day. Shorthorns headed by Independence Lee 427351. Two grandams average 9023 lbs. milk in one year. The Hinman Silo Co., 1050 Champa st., Denver.

75 HEAD OF COWS AND HEIFERS FOR SALE. All the grades we have and a few pure-bred heifers. Two 2-year-old bulls and four bull calves from A. R. O. dams. This is a good bunch and butter is high enough to make them good property. M. E. Penrose, 1855 Blake St., Denver, Colo.

HOGS

REGISTERED, BIG TYPE DUROC JERSEY hogs for sale. Edgemoor Farm, Littleton, Colo. Caldwell Martin, Owner.

REGISTERED DUROC JERSEY BOARS AND gilts, sell at $15 and up according to age and quality. We are sold out on bred gilts, but can contract for gilts to be bred for later farrowing. Our sales at the Denver yards speak for the quality. J.O.D. Ranch, Aroya, Colo.

DUROC JERSEYS FOR SALE—PURE BRED registered Duroc Jersey boar and eight sows. 10 head brood sows, not registered. Priced for quick sale. Let me know your wants. Address H. D. Rockefeller, Lock Box 21, Kremmling, Colo.

(Continued on page 14)

Profitable Farm Poultry

W. E. VAPLON

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries Poultry Department, Western Farm Life, Denver, Colorado.

SANITATION: The definition of sanitation is "The Preservation of Health." A motto which is well to remember is "An ounce of prevention is worth a pound of cure." Well hatched, vigorous, well cared for chicks seldom require doctoring. The mother hen should be kept clean of lice. The brood coop should be sprayed or whitewashed before using. The hen should be kept in the coop during the first two or three weeks, the chicks may run out. Chilling is fatal to young chicks, and the hen is likely to neglect brooding them when they are chilled if she is running at large. The coop floor should be covered with earth and straw. The sun will help to keep this dry. Clean feed troughs, clean water dishes, clean feed and clean water, are easily supplied and easily forgotten.

Clean surroundings are important. If chicks have free range the coops should be changed to new ground often. If chicks are kept in small yards, a portion of the yard should be spaded up often. Green feed and sour milk are a means of sanitation. Chicks grow rapidly and soon require more room. Crowding in small coops is not sanitary.

Shady places should be provided and these places should be kept clean to preserve health. Spading or plowing up places where chicks gather frequently is good sanitation.

Warmth, plus sunshine, plus shade, plus clean feed, plus clean water, plus green feed, plus milk, plus exercise, plus clean surroundings, minus mites, minus lice, minus crowding, equal strong chicks.

CHICK DISEASE

Whenever chicks appear to be sick, the first thing to do is to look for lice on their bodies and on the hen. Moldy grain, foul drinking water, spoiled meat, chilling of the chicks, may cause looseness of the bowels. Prevention is better than cure. The cause should be removed. Warmth, scalded milk or boiled rice may help in case of diarrhoea. A dose of epsom salts, at the rate of one teaspoonful to ten or twenty chicks is a good medicine. Sick chickens should be removed from the brood.

Roup.—The disease which causes the most loss among larger chicks is roup. Roup is a germ disease and naturally gets a hold upon the weaklings first. Runts and weaklings should never be permitted to live, at least not with the flock. The very best and strongest of the flock may become temporarily weakened or out of condition because of neglect, insects, or bad weather, which may cause them to take cold. Then is the time the roup germ can get in its work and the poultryman must pay heavily for having kept the weaklings in the flock.

Swollen heads, a bad smelling discharge from the nostrils, coughing and wheezing are symptoms of roup. A solution of one part zenoleum or other coal tar preparation, and five parts of water is sometimes a help in case of roup. The head of the chick should be held in the solution, causing it to choke and strangle. This will cleanse and disinfect the nostrils and throat. Roup is contagious. In bad cases, when eyes are closed and the odor and discharge from the nostrils are very bad, the chickens should be destroyed. The bodies should be buried or burned.

Chicken Pox.—This is a contagious disease, causing sores on the face and comb. It is a disease not very common in the mountain states.

PARASITES

There are two common varieties of lice found on domestic poultry. The large louse found on the heads of baby chicks can be controlled by greasing. A very small amount of lard or vaseline rubbed into the down on the top of the chick's head will kill these lice. The body louse, so common on grown fowls is generally controlled by means of the earth or dust bath. Chicks should be examined for lice frequently until they are old enough to cleanse themselves in the earth bath.

A sitting hen kept free from lice will mean liceless chicks. Probably lice cause more loss among little chicks than any other one thing.

Feeds

The composition of a growing pullet's body is as follows: Water, 55.5 per cent; crude protein, 21.2 per cent; fat, 19.9 per cent; ash, 3.4 per cent.

Chicks on range can usually find the things that are needed to build up strong bodies. Chicks penned up must be furnished a variety of feed in order to develop properly. While only part of the food eaten by the chicks is digestible, and therefore usable in building up the body, that portion which is indigestible has a service to perform.

The safest rule in feeding chicks that are kept penned is to furnish as much of a variety of feed as possible. They should have all the bulky feed, such as vegetables, grass, or alfalfa they will eat ,and some form of animal food, such as beef scrap, fresh ground bone, or milk. On free range, a large variety need not be furnished because the chicks find worms, bugs, and grasshoppers to take the place of beef scrap and ground bone. Sour milk or buttermilk should always be furnished when possible. Waste grain and seeds furnish a variety, and of course green feed is found in abundance.

The protein in the feed goes to make flesh, muscle, feathers, blood, etc. For this reason feeds which contain a large amount of protein are valuable for growing chicks. The carbohydrate portions of the feed go to produce heat and energy.

One reason fowls are so valuable on the farm is that they make such good use of waste material. "A penny saved is a penny earned." As far as possible, home-raised feeds should be used, as profits largely depend on the cost of raising chicks to marketable or to laying age, and on the cost of producing eggs.

Many good things recommended for chickens are very costly, such as oatmeal, green cut bone, etc. A good substitute for oatmeal is ground oats as it is bought at the mill; the hulls sifted out can be fed to the grown fowls, pigs, or other stock. Skim milk, sour milk or buttermilk are good substitutes for fresh cut bone and usually cost much less.

A good ration: Cracked corn, 4 pounds; cracked wheat, 4 pounds; oatmeal, 1 pound.

This should be thoroly mixed and fed in fine chaff or litter so the chicks will have to dig it out. A separate feeding place should be provided so the larger fowls will not rob the chicks. After feeding a few times, one will learn how much to feed by digging into the litter to see how much remains after the chicks finish their meal.

Mixture for mash: 4 parts bran, 2 parts fine corn chop; 2 parts sifted ground oats, 2 parts middlings.

The above should be measured and thoroly mixed. Ground oats and middlings may be hard to obtain and may be left out, altho one or the other should be used if possible. This mixture, thoroly moistened with milk or water, should be fed once a day. The same mixture made into johnny-cake and baked in the oven offers variety; this should be fed in pieces allowing the chicks to pick at it at will.

Greens: Vegetable matter is easily furnished during the summer. There is no danger of overfeeding greens, but they should be furnished fresh and crisp daily if chicks are penned up.

Good medicine: Fresh water; milk of any kind; cleanliness, of body and surroundings; greens, lawn clippings, alfalfa, vegetables; fresh earth for the bath; shade; sunshine; exercise.

Broken beans and peas, sunflower seed, kafir, milo and ground barley are all valuable feeds, and may be used in addition to the other feeds mentioned, or as substitutes.

"Always Does the Work and Does It Right"

ROUGH ON RATS

DON'T DIE IN THE HOUSE

UNBEATABLE EXTERMINATOR OF RATS, MICE AND BUGS

Used the World Over. Used by U. S. Govt.

It Can't Fail—It's All Exterminator

STOP FATTENING RATS, MICE & BUGS!

On your food or on Catch Penny ready-to-use substitutes—whose bulk is inert flour and grease

WHY TRAP RATS & MICE, ONE BY ONE, while Those Uncaught rapidly increase!!!

End Them All Tonight With a 25c box of Rough on Rats

The Recognized Standard for Half a Century

At Drug & Country Stores

OVERLAND GIVEN

Don't buy an auto. If you live in the country or town under 10,000, you can get this new, 1917 OVERLAND without cost, as a reward for a few weeks' spare time work in your own community. Many machines already given away. Write today for my easy plan.

H. D. BRATTER, Mgr.
Dept. P OMAHA, NEB.

Tells why chicks die

E. J. Reefer, the poultry expert, 4245 Reefer Bldg., Kansas City, Mo., is giving away free a valuable book entitled, "White Diarrhoea and How to Cure it." This book contains scientific facts on white diarrhoea and tells how to prepare a simple home solution that cures this terrible disease over night and actually raises 98 per cent of every hatch. All poultry raisers should certainly write Mr. Reefer for one of these valuable FREE books.

The Farmers Life Insurance Company

Home Office, 340 Gas & Electric Building,

DENVER, COLORADO

Admitted assets .....$ 2,288,644.00
Insurance in force..... 16,689,093.00
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DO BUSINESS WITH A HOME CONCERN AND KEEP YOUR MONEY IN THE WEST

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Dr. J. E. Kinney.....Medical Director

THE GRANGE

(Continued from page 2)

Darden Pomona Grange will be entertained by Wheatridge Grange Saturday, June 2nd. Governor Julius C. Gunter and other prominent speakers will be on the program and those who can possibly arrange to attend should be present.

F. A. Wells, president of Darden Pomona Grange and a real live deputy state organizer, continues his good work. He organizes from one to three new Granges a week when he is able to get into the field; bad roads have cuased quite a little delay in this work.

Thursday evening, April 26th, Maple Grove Grange initiated about thirty new members as a result of its recent membership campaign. A large crowd was in attendance and the degree work was conferred in a most interesting manner. A very strong character in the Maple Grove degree team is Sister Lena Everett. One is impressed that he is listening to a reader of unusual ability, paint in eloquent language, the beauty and grandeur of nature and the opportunity to enjoy every moment of life thru the exemplification of the Grange ritual. Columbine Grange gave a very interesting entertainment; their play, "In Suspension," scored a big hit and kept the house in an uproar from start to finish. Subordinate Granges, that want to put on something that will renew their interest should secure the Columbine Grange entertainers. Refreshments were served after the play. Maple Grove Grange goes into the summer with renewed zeal.

Prepare the Summer Fallow Now for Winter Wheat

(Continued from page 8)

experts as to whether deep plowing uses up the soil more than shallow plowing.

Theoretically it does; practically it does not. The larger crops raised on the deep seed bed undoubtedly use up more mineral plant food, but the depth conserves the humus which is much the more important of the two, for by mismanagement it may be easily exhausted, while the mineral matter is contained in nearly every granule and is practically inexhaustible and can be unlocked only a very little at a time by the fraction and attrition of farm implements supplemented by the chemical action of acids in the soil derived from humus and the air. If the farmer's soil is his gold mine, the best thing he can do is to get the gold out, and he need not worry about exhausting it so long as he can keep up the supply of humus.

HORSES

FOR SALE—ONE DAPPLE GRAY PERCHERON stallion. Priced right. Write for particulars. Erdman Bros., Holyoke, Colo.

NOBLE REX, 5-YEAR-OLD REGISTERED SADdle-bred stallion, 16 hands, black, 1,200 lbs. Grand individual, goes all five gaits; winner of stallion class at 1917 Denver Stock Show. By a son of the immortal Rex McDonald. J. O. D. Ranch, Aroya, Colo.

JACKS AND MULES

KIT CARSON, A BIG-BONED 7-YEAR-OLD jack, winner at Denver show, $500. Also a great yearling jack, promises to be bigger and better than his sire, and out of a jennet who took first at Denver also; price, $250. We have some excellent mules for sale; all ages and sizes. J. O. D. Ranch, Aroya, Colo.

HELP WANTED.

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

FARMERS WANTED—$75 A MONTH, MEN AND women. U. S. Government jobs. War means hundreds vacancies. Common sense education sufficient. Write immediately for free list positions now obtainable. Franklin Institute, Dept. O, 177, Rochester, N. Y.

SEEDS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WHITE BLOSSOM SWEET CLOVER, REASonable. John Lewis, Hamilton, Kans.

MEXICAN (PINTO) SEED BEANS—FIFTEEN centa per pound. Dutton & Stubbs, Fowler, Colo.

ALFALFA SEED FROM GROWER, $7.80 PER bushel. Sacks extra. G. J. O. Felzien, St. Francis, Kan.

BLACK HILLS NON-IRRIGATED ALFALFA seed, 20c per pound. N. A. Jensen, Farmingdale, S. D.

ATTENTION FARMERS—BUY YOUR GRIMM alfalfa seed, Holgrimson and Lyman strains, direct from grower. Will furnish affidavits showing its history. Purity test, 99.89 per cent. Price 42c. Triangle Ranch, Cottonwood, S. D.

NURSERY STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

FOR SALE—EVERBEARING STRAWBERRY Plants, superb, guaranteed to produce fruit the first year. $1.00 hundred, $8.00, 1,000. Ed Keehn, Littleton, Colo.

SWEET POTATO SLIPS, ALL VARIETIES, delivered postpaid; guaranteed to arrive in good condition; 100, 35c; 500, $1.50; 1,000, $2.75. Order now—be sure of slips when you want them. Ozark Nursery, Tahlequah, Okla.

MISCELLANEOUS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

BUILD ON CONCRETE—USE STUD ANCHORS. Anchor Works, Mendota, Ill.

FARMERS AND STOCKMEN, IF TROUBLED with Loco Weed, you can kill it with our Loco Killer without chopping or digging. Also want men to handle territory. If interested, write Western Mfg. & Trading Co., Box 673, Denver, Colo., Successors to Weisenboru & Huck.

WOMEN, ATTENTION—SAVE MONEY. DElicious breakfast food. Easily made. Mrs. Sharp's recipe. Inclose a dime. Sharp, Iola, Kan.

MOTORCYCLE BARGAINS—WE HAVE A FINE line of used and rebuilt Excelsiors, Harleys and Indians. Every one guaranteed as represented. The machines were taken in trade on new Harleys and Excelsiors and are priced very low. Send for list No. 202. It's free. Floyd Clymer Motorcycle Garage, 607 8th Ave., Greeley, Colo.

BUSINESS CHANCES

FREE FOR SIX MONTHS—MY SPECIAL OFfer to introduce my magazine, "Investing for Profit." It is worth $10 a copy to anyone who has not acquired sufficient money to provide necessities and comforts for self and loved ones. It shows how to become richer quickly and honestly. Investing for Profit is the only progressive financial journal and has the largest circulation in America. It shows how $100 grows to $2,200; write now and I'll send it six months free. H. L. Barber, 449-20 Jackson Blvd., Chicago.

PATENT ATTORNEYS

IDEAS WANTED — MANUFACTURERS ARE writing for patents secured thru me. Four books with lists hundreds inventions wanted sent free. I help you market your invention. Advice free. R. B. Owen, 162 Owen Bldg., Washington, D. C.

BEE SUPPLIES AND HONEY

BEE SUPPLIES OF BEST QUALITY. SEND for 68-page illustrated catalog. We also sell comb and extracted honey. The Colorado Honey Producers' Association, Denver, Colo.

KODAKS

KODAKS, CAMERAS, PHOTO SUPPLIES—Ford's, the best kodak store, 1029 16th St., Opp. Old P. O., Denver. Colo., for Eastman Kodaks, all makes cameras, films, photo supplies; develop any size roll films, 10c; print pictures, 3c each and up; mail orders solicited; kodak and camera catalogs mailed free upon request. Mention this paper.

IF YOU DON'T FIND ADVERTISED HERE what you want, write our classified advertising department and they will be glad to place you in correspondence with the right parties.

Livestock

The market for livestock continues o climb and the indications point to continued increase. Hogs are reaching for the $16 mark and will probbly not stop until the $20 mark has een passed. The fact is that there s a big scarcity of hogs in the country. When the price of feedstuffs oared to figures thot to be prohibiive, farmers reasoned that they could ealize more money thru selling their ogs at the extremely high price and hen sell their grain rather than take hances of not getting any better rice for their grain when fed to hogs nd at the same time assume a risk f suffering a loss thru disease. As result, there is a decrease of fully 5 per cent in the supply of brood ows, which will materially decrease he future supply of hogs.

The same is true of cattle and sheep which have reached higher prices han have been known for many ears. With steers reaching for $13 nd lambs for $16, it behooves the armer to make every possible effort o raise all the livestock possible and ven strain his credit to secure more rood animals.

The high prices of livestock and rain offer such inducements to market everything possible in that line hat there is danger of many farmers iscontinuing livestock and engaging n the growing of grain. This would ean the depletion of the soil and he long step backward. It is well in hese times of hysteria to stick to the nethods that are a demonstrated uccess. Diversified farming is the ractical and profitable method, and vhile there should be a marked inrease in grains, there should also he n increase in livestock, and it should e of a better grade in order to realize he most out of the high priced feeds.

Speed Up Meat Production

Here are some practical things that an be done to improve the livestock ituation in Colorado:

Furnish your cows better feed and are and save and grow a better calf rop.

Keep every young animal growing nd push it to early maturity. Most f the ranges are pretty well occupied, ut the production may be greatly increased, if not doubled, by growing nore winter food and by quick growth, hortening the grazing period by half.

Every farmer and ranchman should row more forage crops. The long vinter just passed has left no surplus.

Grow all the barley you can to make neat production. The corn grown and sed for this purpose in the past will e needed for breadstuffs in the future.

Keep cattle in better condition in he winter in order to fatten them on rass in the summer.

Finish your meat animals on Colorado-grown feeds. The crops we grow f barley, oats, spelts and roots make he finest beef, pork and mutton in he world.

Our native grasses comprise our nost valuable crop. Give them the ame chance you give other crops.

Everyone appreciates the necessity f keeping a hog growing. The same ule applies with equal force to cattle, heep and horses.

We can grow as large a yield of barley per acre as is grown of corn n the corn belt, and barley produces he highest priced bacon in the world.

Every farm and ranch, however small, should grow some sort of livestock. Poultry may not be much demanded in the war, but it is a mighty good substitute for something that is called for abroad, and may be made to greatly relieve the demand for meats at home.

No veal calves should be killed from beef breeds of cattle. England actually increased the number of its cattle after the war began by stopping the killing of calves under six months old.

High prices create a tendency to overstock. The buying or holding of more livestock than can be properly fed or cared for will not only bring loss to the owner but tend to decrease the meat supply rather than increase it. The best results will come from pushing the growth of smaller holdings. This method will generally involve less investment and debt, produce more profit to the grower and feeder and bring greater relief from the shortage of meats.—E. M. Ammons, Chairman Farm Bureau, Denver Civic and Commercial Association.

Hog Consumes By-Products

The hog has no rival as a consumer of by-products and numerous unmarketable materials which but for him might be wasted. Kitchen refuse, not only from farms but also from hotels and restaurants, when cooked before being used makes an excellent feed.

The value of skimmed milk as a hog feed is known on every farm though not always fully appreciated. In the neighborhood of many large dairies pork production is a very prominent and lucrative supplement to the dairy industry.

To prevent tuberculosis, all milk and milk products should be cooked before being fed to hogs. To control hog cholera, use sanitary precautions and anti-hog cholera serum treatment.

The hog is also a large factor in cheapening the production of beef. Hogs are placed in the cattle feed lots to utilize the corn and other feeds the cattle have failed to digest and which otherwise would be wasted. Hogs following steers in many cases have increased the profit per steer from $6 to $9. Hogs should not be allowed to follow dairy cattle unless the cattle are tuberculin tested.

Disease, such as cholera, has been taking a smaller toll the past season than in recent years; more purebred and high-grade hogs are available than ever before; prices of hogs are now past the 16-cent level; demand for pork for home consumption and for export is keen. All of which means that the farmer who does not raise hogs is losing a chance to increase the supply of pork and thus serve the country and at the same time expand a profitable phase of farming.—U. S. Department of Agriculture.

Four 4-Year Registered Belgian Stallions, My Own Growing, Weight, 8,480 Pounds

A specialty of individuals of first rank, 3 and 4 year stallions, ton and heavier, and yearlings and twos nearing the ton weight. Registered mares broke to all work and sure in foal, and fillies. Terms if it will accommodate you. Over 100 head for sale.

PERCHERONS—BELGIANS—SHIRES

The good ones are cheap enough when you buy from the grower.

FRED CHANDLER, CHARITON, IOWA

Chariton is on main line C. B. & Q. direct from Denver

HOLSTEIN CATTLE
PERCHERON HORSES
THE
Jarosa Ranch
LONGMONT, COLO.

Offer a large selection of Holstein Cattle—both sexes—young or matured stock—registered or grades—for sale. Also pure-bred Percheron Horses

Buy WESTERN ACCLIMATED STOCK AT HOME

SATISFACTION GUARANTEED

Write for Description Today

Howard M. Jay, Owner R. F. D. No. 2, Box 71

THIS GRADE GUERNSEY COW

in Illinois produced in one month 93.9 lbs. of butter fat, equivalent to 109.5 lbs. butter—over 3½ lbs. daily—and 1566.1 lbs. milk testing 6% fat.

GUERNSEYS are the MOST ECONOMICAL PRODUCERS of BUTTER FAT

Write for a free breeder's calendar and our beautiful booklets

THE AMERICAN GUERNSEY CATTLE CLUB

BOX PX PETERBORO, N. H.

High-class Jerseys. Count Majesty and Majesty Oxford combination herd bulls. Both are great dairy bulls. Have a great August calf by Count Majesty ready for sale. He is fine. Have an imported in dam calf by a son of "Oxford You'll Do" that is a regular "peacock." Also Duroc hogs of best breeding. All stock registered.

A. M. McCLENAHAN, Greeley, Colo.

BLUE RIBBON HERD

DUROC JERSEY HOGS
Everything Registered
Stock for Sale
C. F. BURKE, Rocky Ford, Colo

JACK MEN, LISTEN

I have the largest 6-year-old jack west of the Missouri River for sale. Other bargains in Mammoth jacks and jennets.
Inspection Invited Satisfaction Guaranteed
W. H. WHEELER, Garden City, Kan.

Become an Auctioneer Free circular. Ability developed or money refunded Sargent's International Auction School, Denver and Sioux City.

BARGAINS Percherons, Belgians, Shire, Suffolk, Clyde, Hackney, Great Coach Stallions. Good Jacks. Time given purchasers.
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DR. A. A. HERMANN
Veterinarian,
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Specialty, Diseases of Cattle.
New Blackleg Serum. Immunizes perfectly calves of any age by only one injection. Descriptive literature furnished.

$1195 F. o. b. Racine

Mitchell Junior—a 40 h. p. Six
120-inch Wheelbase

Mitchell SIXES

$1460 F. o. b. Racine

7-Passenger—48-Horsepower
127-inch Wheelbase

Trust John W. Bate

To Build a Car As You Want It

The latest Mitchells will show you that John W. Bate is a master at building cars.

You have never, at any price, seen a car so complete. You have never seen such luxury, so much over-strength, at anywhere near our price.

How Mr. Bate Works

Mr. Bate, the great efficiency expert, has spent 14 years on Mitchells. The latest Mitchell is his 19th model. It is the final result of 700 improvements.

But he started by building this model plant, which now covers 45 acres. He spent millions of dollars to build and equip it to build this one type economically.

Nowhere else in the world could a car like the Mitchell be built at the Mitchell cost. His methods will save us on this year's output about $4,000,000.

It is that saving which pays for all the Mitchell extras, and gives men these matchless cars.

31 Extra Features

There are 31 features in the Mitchell which nearly all cars omit. Things like a power tire pump, reversible headlights, dashboard engine primer, ball-bearing steering gear.

There is more beauty and luxury than was ever before combined in a modest-priced car. The reason is, we build our own bodies. And all we save goes into this extra luxury.

And no other car has Bate cantilever springs. They make the Mitchell ride like an aeroplane. In two years' use, on many thousand cars, not one of these springs has broken.

100% Over-Strength

But the chief Mitchell extra is double strength in every vital part. In the past three years we have doubled our margins of safety. We are making the Mitchell a lifetime car. Three of these cars have already run over 200,000 miles each. That's 40 years of ordinary service.

Over 440 parts are built of toughened steel. All safety parts are vastly over-size. All parts which get a major strain are built of Chrome-Vanadium.

In these days of high steel prices, any car which is built this way is either rare or costly.

TWO SIZES

Mitchell—a roomy, 7-passenger Six, with 127-inch wheelbase and a highly-developed 48-horsepower motor.

Price $1460, f. o. b. Racine

Mitchell Junior—a 5-passenger Six on similar lines, with 120-inch wheelbase and a 40-horsepower motor—¼-inch smaller bore.

Price $1195 f. o. b. Racine

Also six styles of enclosed and convertible bodies. Also new Club Roadster.

Everything You Want

Mr. Bate has worked 14 years to combine in Mitchells everything you want. He spent one year in Europe, to glean the best ideas from there.

Before designing this year's Mitchells, his artists and experts examined 257 new models. So all the known attractions are combined in these Mitchell cars.

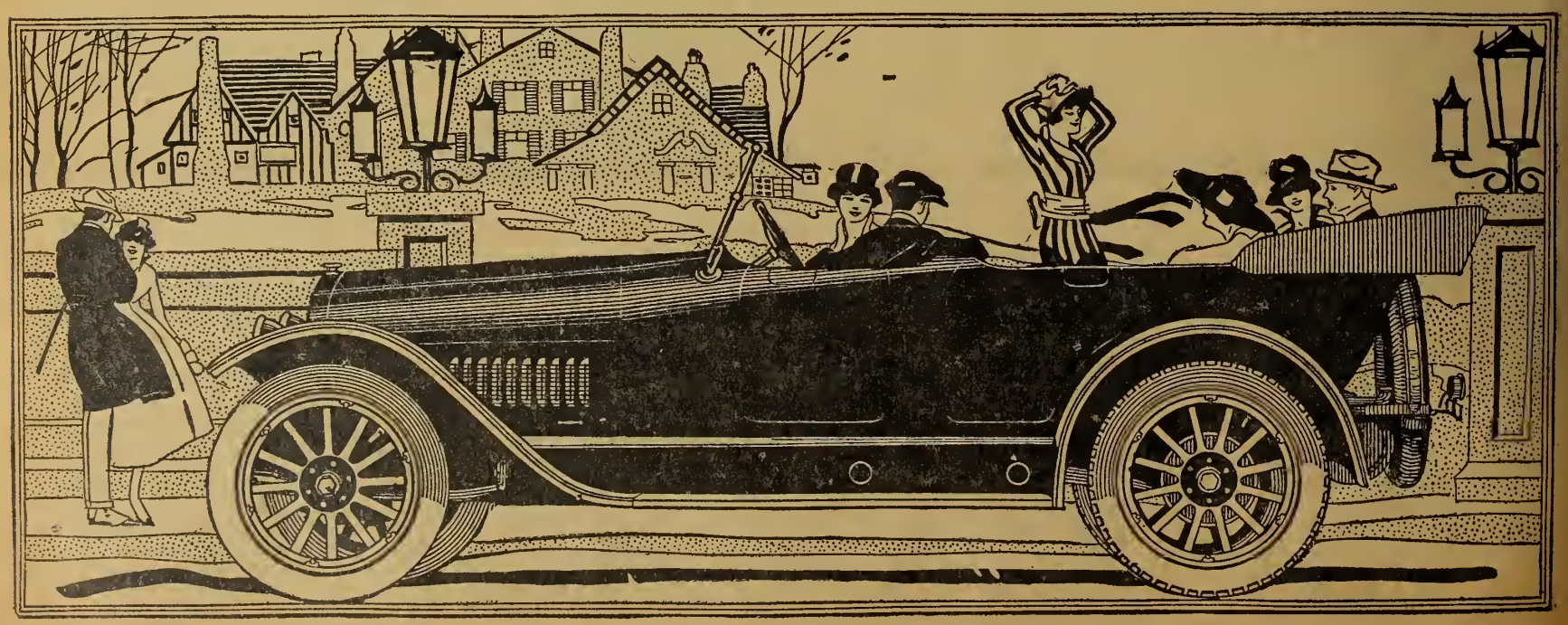
One Size, $1195

The smaller Mitchell—Mitchell Junior—costs only $1195 Yet it is a powerful Six, with a 120-inch wheelbase. You never saw such value in a car around this price.

But the larger Mitchell offers special value. See both sizes. See the extra features, the extra beauty and the extra strength. You will want a Bate-built Mitchell then for the car you buy to keep.

If you don't know the nearest Mitchell dealer, ask us for his name.

MITCHELL MOTORS COMPANY, Inc.
Racine, Wis., U. S. A.



Western Farm Life

Denver, Colorado
June 1, 1917

A Practical Demonstration, Pulling Two 14-Inch Gang Plows—a Four-Horse Job

Next Saturday—Near Your Home

On Saturday, June 9th, there will be a field demonstration of the STAUDE Mak-a-Tractor near your home. Mail the coupon at once and we will tell you where you can see one of *the most efficient farm tractors in the world at work.* This demonstration will be repeated on *each Saturday* during the month of June. Plan now to be there and see for yourself what the STAUDE can do. Go on June 9th, if possible, but be sure to go on the next Saturday if you can't get away for the first demonstration.

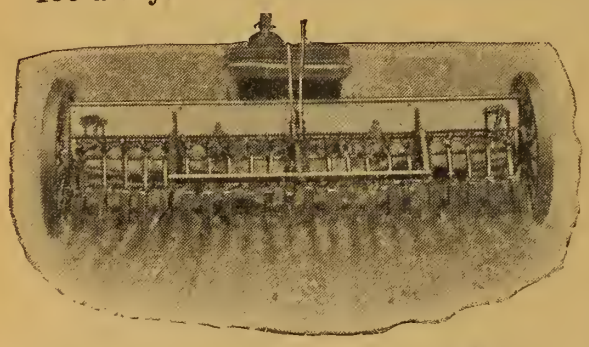
During this month we will conduct more than 2,000 demonstrations for the benefit of the progressive farmers of this country. We promise to show you and your friends a farm tractor that will do your farm work at *one-fourth the cost of horses*—and *one-half the cost of any other type of farm tractor now on the market.*

The STAUDE Mak-a-Tractor converts any Ford car into a tremendously powerful small tractor. It gives your Ford *eleven times the pulling power* that it now has—yet puts only half of the maximum load on your engine. Your engine will last twice as long as it would under full load on the road—and the tractor attachment will never wear out, with ordinary care.

Come to the demonstration and learn the possibilities of the .

STAUDE Mak-a-Tractor

Make us prove to you that it will do the work of any four horses—go anywhere that they can go—travel 5 miles to their 4 miles—do it 24 hours a day during rush season—6000 already in operation, and we are now delivering to dealers 150 a day. Your dealer can make immediate delivery.

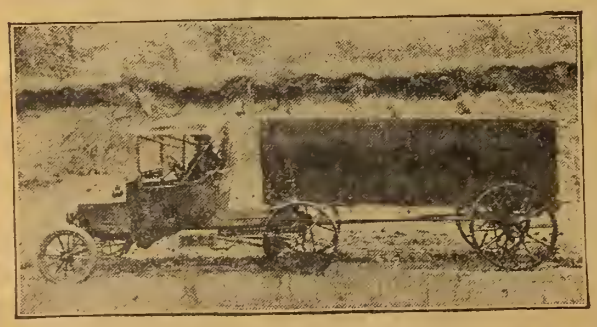


Plants Seeds in Half the Time

We guarantee the STAUDE Mak-a-Tractor to pull the load of the best and fastest-walking four horse team you ever saw. It will pull your biggest seeding machine or planter 5 miles to their 4—and by having an extra driver you can plant seed night and day. You can plow, harrow and plant when the soil is just right—in less than half the number of days you have to allow with horses. You save three-fourths the cost of planting and get your crop well started before drought or pests have a chance at it.

Binds Grain Cheaper and Faster

Pulling the binder has always been a horse-killing job. But the STAUDE pays no attention to hot weather, flies, neckweight and long hours. It enables you to cut 25 per cent more grain or corn in ten hours. And you can make *one binder do the work of three,* if you care to run it all night. Then hook onto two of your biggest racks and haul two loads to the stack at one time.



Saves Time and Money in Hauling

You will appreciate the STAUDE Mak-a-Tractor if you have a long haul to market. For it will haul the biggest 4-horse load you ever saw—5 miles per hour—without stopping for rest, water or feed. It never gets tired—slippery roads or sand have no effect—and our special radiator prevents the engine from overheating. Mail coupon for full particulars and location of nearest demonstration.

Showing High Ground Clearance

Showing rear view of your car with STAUDE Mak-a-Tractor attached. The Ford engine and chassis *does not pull a pound.* Every job is equipped with a STAUDE special radiator and oiling system. Tractor attachment easily replaced by regular rear wheels for pleasure driving *in 20 minutes.* Price of complete STAUDE Mak-a-Tractor is $195.00.

"Tell Me Where" Coupon

E. G. STAUDE MFG. CO.,
2607 University Ave., St. Paul, Minn.

Please tell me location of your nearest demonstrations to be held in my neighborhood each Saturday during June. Also send me full particulars about your STAUDE Mak-a-Tractor. I (do) (do not) own a Ford car which I would like to use for farm work as well as driving.

Name .....

R. F. D. or Street No. .....

Town .....

County ..... *State* .....

E. G. STAUDE MFG. CO.

2607 University Avenue St. Paul, Minn.

Published Semi-Monthly by The Farm Life Publishing Co., Denver, Colo. 14th and Arapahoe Sts.

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WESTERN FARM LIFE

A Western Magazine for Western Farmers and Stockmen

Comprising Ranch and Range, Farmers Life and Fruit Journal, Trans-Mo. Farmer and Ranchman

Largest Circulation of Any Farm Magazine in the West

Volume XIX | DENVER, COLORADO, JUNE 1, 1917 | Number 11

Wild Rye a Neglected Hay and Pasture Plant

HARDY PERENNIAL THRIVES IN SPITE OF DROUTH AND FROST

W. J. HARSHA

THERE are giants in this western land of ours. There is a whole family of them. In number they total just a dozen. They are all asleep. If once they could be awakened they would be of inestimable value to the farmer. We call them giants; we recognize them as such. But we let them sleep. And only a little effort on our part would waken them.

One or the other of them ought to be at work on every farm in the great region comprising the field of this periodical. Idaho, Utah, Wyoming, Colorado, New Mexico—the giants live and thrive in each and all of these states. But they are asleep. There is hardly a farm on which one of them may not be found dozing in the sunshine. The average farmer pays no attention to them. Some farmers try to get them off the place. But giants are hard to move. If you roll one of them over, even with a plow, you will find him next spring in about the same locality, growing but sleeping still.

The family name is "Elymus." This name is like Smith or Jones or Brown. To this name are attached given names just as we speak of John Smith, Jack Jones or Robert Brown. The giants' names are Simple Elymus and Robust Elymus and Canada Elymus and so on. But we do not use these scientific names when we speak of them. When we are asked what this growth is that comes up so green and succulent every spring on the edges of our fields, or just over there near the old cabin, we say:

"Oh, that's giant wild rye."

Or perhaps we just say, wild rye. We know the growth is a giant; it attains a height of from five to seven feet. We have a general idea that it has roots, stems, greenness, vigor, and we know that stock will eat it, but we do not take much thought as to its particular values. We ought to take thought of these values. We ought to wake it up.

Habitat of the Plant

Let me introduce you to the family of Elymus. For the most part I shall tell where the members of the family may be found in Colorado, for this state is my home. I know most about it. But I may be able to give some general hints as to the family residences in other states.

1. Elymus simplex. This is the Simple Simon of the family. You will find it in Summit County, Colorado, growing up to altitudes of 11,000 feet. This is one of the advantages of this growth, shared in by the other members of the family in a measure—it flourishes at high altitudes. In Wyoming, also, and so westward to Oregon this growth is found, sometimes on the plains, but more often in the hills. It grows in clumps, as all the wild ryes do. It is very hardy; frost does not injure it greatly. Snow cannot break it down. Cattle eat it long after snow has hidden all other grasses. It is indeed a grass, as all its fellows are. We sometimes call it Lyme Grass, and perhaps this is the better name for it and all its brothers.

2. Elymus condensatus. This is next in hardiness. It grows up to 10,000 feet of altitude. You find it on the hills and in the dry valleys, the drier the better for it. Drouth does not harm it. It is very widely distributed, having been noted in localities all the way from Alberta and British Columbia to New Mexico and California. In Colorado it is found in spots along the Grand River near Hot Sulphur Springs; at Doyle's; near Boulder; in Saguache County; on Grant Creek; in Deadman Canon; on Campton's ranch and on Miller's ranch near La Porte.

3. Elymus triticoides. This growth is found on hillsides and often creeping into meadows in altitudes up to 9,000 feet. It has been noted in Montana, Washington, California and Colorado. In this last state it is common on the foothills of Larimer County; near Georgetown; and along Grant Creek. It takes to the high altitudes, seldom being found below 6,000 feet.

Elymus Ambiguus, (Wild Rye). Specimen from Rist Canon, Larimer County, Colorado

4. Elymus ambiguus. This is the prodigal son of the family, the wildest of wild ryes, growing between altitudes of 6,000 to 9,000 feet. It seems to prefer the canons. It is found almost altogether in Colorado, at the following points: Empire, Penn Gulch; Fort Garland; Minnehaha; Manitou; Engelmann Canon; Rist Canon; Badito; Artists' Glen; North Cheyenne Canon; Veta Pass; Campton's Ranch. In these localities it is the first thing to come out of the ground in the spring, and it comes riotous, plentiful, green and full of sap for the hungry stock.

5. Elymus glaucus. This is another of the high altitude ryes. Seldom is it found below 7,000 feet of elevation, and thrives anywhere from that up to 11,000 feet above the sea level. Many a mountain meadow finds its clumps crowding out the grass in places. It loves to hide its first growths among bushes, but it soon tops the shorter of these. It grows in Alberta and British Columbia. The high mountains of California have specimens of it. A few bunches of it grow in Michigan, but Colorado is its chief home. In this state it is reported on the mountains near Pagosa Peak; around Hamor's Lake, north of Durango; about Ouray; on Keblar Pass; at Villa Grove; in Horsetooth Gulch; bordering Ute Pass road; on the mountains above Cameron Pass and on the edges of aspen groves in western Gunnison County. To some of the farmers living in these localities it is known as Siberian lyme grass.

6. Elymus strigosus. The chosen home of this wild rye is the foothill country in Wyoming and Colorado. The top elevation at which it is found is around 7,700 feet. Shale slopes appear to be favorable to its maturity and largest size. To the westward of Boulder where the hills break into higher mountains it is common.

7. Elymus macounii. This is rather a distinctively Canadian grass, found in Manitoba, Saskatchewan and Alberta. But it is also found in Utah and New Mexico. It is not adapted to altitudes above 7,000 feet and seems to prefer elevations around 4,000 feet. In Colorado it is found near Denver, Durango, Fort Collins, Gunnison and Manitou.

8. Elymus canadensis. This is one of the two wild ryes that appear to love river banks. It is very widely scattered, reported all the way from Nova Scotia to the state of Washington, and from the Canadian border to Georgia and New Mexico. The altitude limits are those of the last member of the family mentioned—4,000 to 7,000 feet. It can grow and does grow away from water, but water is no detriment to it. It loves to hide among bushes. It is reported in Colorado at Durango, Fort Collins, along the Platte River near Denver, at La Porte, Salida and Black's Lake, and in the gulch west of Soldier Canon.

9. Elymus brachystachys. This member of the family prefers as dry spots as can be found on the plains or hills from Michigan and South Dakota to Texas, New Mexico and Utah; it is also found in Old Mexico. Its altitude limits are 4,000 to 6,500 feet. In Colorado it is reported in Rist Canon, in many places in the eastern part of the state and along the river east of Fort Collins.

10. Elymus robustus. This is the sturdiest of all the family, loving the banks of rivers, but capable of life far from them . It is reported in South Dakota, Idaho and Missouri. In Colorado it is found near Idaho Springs in Black Canon, in the vicinity of Boulder and near Fontaine qui Bouille. Its favorite elevations are between 5,000 and 6,000 feet above the sea.

11. Elymus villiflorus. This is distinctively the wild rye of the eastern plains of Colorado. But it is found also on the foothills. There is a growth among the Black Hills and on the Canadian Rockies that is apparently the same. It thrives best around 5,000 feet above the sea.

12. Elymus saundersii. This is the baby of the family, though a lusty fellow. It is found on many of the mountains of Colorado.

Advantages Are Many

From this brief summary of the habitat of this family of wild grass, it will surely be apparent that farmers in almost any part of the country might make more use of it as a pasture grass, and even as a meadow grass, than they now do. Its several advantages are as follows:

(a) It is an unrivaled drouth resister. It will stand more dry weather than any growth I know of. Last year was a particularly dry year in the neighborhood of my ranch. Sudan grass died down. Brome grass made but small growth. New sweet clover just peeped out of the ground. But wild rye stood higher than my head, and I am no pygmy. In the dozen years I have been studying it not once has it failed to make big growth without a drop of irrigating water.

(b) It will thrive on alkaline lands. In places where alfalfa is impossible on account of alkali, wild rye will attain full growth and maturity. In this respect it is better than alfalfa and it is by no means deficient in protein.

(c) It is the earliest thing on my ranch to come up in the spring. My cattle and hogs watch for it. Snow may be everywhere except just on the borders of a pond where the sun strikes, or on a southern slope, and there the green bunches of lyme grass will appear. All my stock make for these spots.

Makes a Rapid Growth

(d) It grows as rapidly as Sudan grass and frost does not hurt it. In this it is better than Sudan grass. And it will grow at altitudes, as I have shown, impossible for Sudan. And you need to plant it only once.

(e) It is nutritious, just how much so is not as yet definitely known. We have neglected it and no one can tell exactly what it is worth as pasture and forage. But stock thrive on it; this much is certain. In its earlier growth it is full of juice; you can see this running out when the broad leaves are broken.

(f) It is somewhat laxative. Horses grazing it may become too lax of bowels, but this is an advantage to cattle.

(g) It is a very generous seeder. The heads are full of small, thin, long rye grains. All classes of stock are fond of this grain. You can scarcely lead a horse past a clump of it when the heads are formed. A farmer or his boy or girl, for that matter, might get enough hand-picked seed in a single morning to plant an acre if the attempt were made. And on the market there are seed strippers. They cost in the neighborhood of a dollar and a half. One of these strippers would enable a man to gather a hundred pounds of seed in a couple of hours.

(h) Planted at the rate of 25 to 30 pounds to the acre, this seed will produce a permanent meadow or pasture of fine grass. For hay the grass should be cut before it becomes too rank. Thus cut, a big tonnage of rather coarse but very palatable hay

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Rye, Where Mountain Meadow Butter Is Made

PROBLEMS OF FARMERS SWITCHING FROM BEEF TO MILK

KENTUCKY bluegrass is making prosperity for the Rye Farmers' Co-operative Creamery, in southwest Pueblo county, Colorado. This grass has "taken" the meadows; it grows in the fence corners, along the roadside, on the slopes of the hills and in the sheltered valleys at the base of Greenhorn mountain. It gives the spring run of Mountain Meadow butter, made by the farmers' creamery, its rich golden color. It is the first green thing to show in the pastures, coming before the spring snows have ceased.

The village of Rye lies at an elevation of 7,000 feet above sea level, in the shadow of mountains that rise 5,000 feet higher. All around are well grassed, timbered foothills, with watered valleys between. The country was once a stockman's paradise, but gradually the ranges have been curtailed, the plow land has been fenced, the homesteader has crept in from the plains and this change in economic conditions has caused the farmers to turn from beef-making to milk. A few cattle ranches remain, but dairy farms predominate.

About thirty farmers belong to the co-operative association that conducts the creamery, which is in its second year. Up to the present time all surplus has been turned back into the plant, in order to make it efficient in every respect. The plant has a capacity of 5,000 pounds a day, but it has never had a larger run than 3,000 pounds a week, but in a few years it will be run to capacity. The farmers were getting 38 cents a pound for butterfat in cream, when I visited the creamery in company with Deputy State Dairy Commissioner R. McCann and County Agriculturist Stanley Smith early in May. And this was 35 miles from the railroad.

Automobiles and good roads have made it possible to build up profitable dairying so far inland.

A. T. Medill, a farmer, is manager of the creamery, and Fred Swigart, a native of Switzerland, is the buttermaker. Mr. Swigart knows all angles of his trade and feels at home in the high altitude, where conditions remind him of his native land.

In a discussion of the needs of the district Mr. McCann emphasized the points, first, of better cows and then more cows, declaring that one good cow, in the long run, was worth more than forty scrubs. Sires with breeding back of them, he said, were another need of the Rye district and he urged the farmers to test their cows, to determine whether they were paying for their keep.

"What can be done to build up the supply for your creamery?" he asked.

"We need a few more farmers who will milk and some of us ought to increase our herds," said W. G. Wixson. "Our chief trouble is to get help enough to handle a good sized herd."

"Raise your own help," suggested a neighbor.

"What effect has the creamery had on the supply of ranch-made butter?" asked Mr. McCann.

George O. Gray, one of the merchants of Rye, made answer: "Not over 150 pounds of ranch butter a week is now being handled by the two stores; in other words, only about 10 per cent of the farmers still make butter. The trouble with us is we have no cream to market in winter. It's all a summer business."

This started Mr. McCann along the line of winter dairying. He cited the fact that in Wisconsin it was now common practice to breed the cows so that they would come fresh in the fall, giving the farmer milk to market when prices are highest and other farm work is slack. On the labor question he declared that the milking machine was solving that satisfactorily, wherever the machines were being handled in the right way. Where a farmer has a herd of twenty cows or more a machine pays.

Farmers Co-operative Creamery at Rye, Colorado

Winter feeding naturally brot up the question of the silo. A. T. Medill said he had a wooden stave silo, but was not satisfied with it, because it dries out—a common complaint about wooden stave silos in the dry air of the mountain states. He said he also was unfortunate in having been unable last fall to get power at the time his corn was just right for cutting. In consequence he had to let it get frosted and it dried out so that he got only 6 tons of ensilage per acre.

"I've got a pit silo," said Paul Ray, "and it's a fine success. In fact, it helped so much this winter that we are just now starting a second one. The first one cost me only $20, not counting the labor, and we put it down 20 feet, the last eight feet in rock. It was soft rock, so we didn't have to blast it. Our silo is 16 feet in diameter and holds about 80 tons. We didn't have any trouble filling it with corn."

W. T. Hunter spoke a good word for a metal silo, which type he has found satisfactory.

A. H. Bushby of Pinehurst ranch, a newcomer from Kansas, stated that one of the difficulties was that every farmer wanted to cut his corn at the same time and that it was hard to get power because of this. At 7,000 feet the growing season is short and no corn has yet been developed that will mature every season. The tendency of the farmer is to give his corn every possible day to insure ripening. Often a freeze overtakes it and everybody rushes into the field to cut the corn and save it for ensilage.

"It means that everybody ought to have a silage cutter," said one farmer.

"You can use your autos for power," suggested the County Agriculturist.

Feeding a Family of Ten on Sixty Dollars a Month

HOW IT IS DONE IN SPITE OF THE HIGH COST OF LIVING

JOSEPHINE LEE FERGUSON

DURING the winter months we live in the near country and in summer the far country makes a home for us. What do I mean by the near country? Those of the city would say "the suburbs." With us it would be "the edge of town," for ours is a little city that does not lay claim to suburban districts. The country begins where town leaves off and we are right on the border, but still within the limits. We are town people in winter, but when the warm months come we load up our wagon and drive away to the hills, to the far country.

So I have the advantage of knowing two classes of housekeeping, two classes of conditions, two classes of women.

Let's be quite clear about these two classes of women. I don't mean the upper and lower class, neither the intelligent and ignorant, nor the rich and poor. I mean the women of the near country and of the far country, with their individual needs, resources and desires. For instance in the matter of housekeeping, or house management as it is now called, when I lived in the city I had the grocery and the meat market within five minutes' walk, or their quick service by telephone, so could purchase the more perishable food stuffs. When in the real country I had to rely more on staples, on things that would keep for days or weeks. Living as I do now, on the border between the two, I find myself working out a system that is neither local nor long distance, but a blending of both.

It's all nonsense to train a woman to keep house with the city market as a near base of supplies, and expect her to make a success of management when she lives eighteen miles from a telephone or market, and twenty miles from a railroad; when she has to go three miles to the nearest mail route, the "common carrier," as far as supplies are concerned, or hitch up, go all the way to town and get what she needs. Some will say, "that is impossible in these days of progress and enlightenment," but you see, six months out of the year I am that woman, and I know. Besides there are more of us up there. I have neighbors all around me living under similar conditions. I could write volumes on the lives of those women, but this isn't a book; it is supposed to be a short article on one way to manage when prices are high and food is scarce.

In talking to the editor of Western Farm Life I made the statement that I was feeding a family of ten on sixty dollars a month. He said, "write an article and tell us how you do it." Dear friends, I am not sure that I can tell you how I do it, nor with prices going higher how long I will be able to do it, but a few suggestions from one who, in the line of food at least, has tried "everything once," may help a little.

I first realized that I must give to my buying and managing (cooking, etc.) the same time and thot that I would give to a business, if I expected to make a success of it. I knew very little about the prices of the things we ate. We had a very bad habit of sending to the store and asking for a quarter's worth or fifty cents' worth of this or that. As a result of this realization I grew more courageous and had a talk with my grocer. I said to him, "what are you selling this or that for, and will it make any difference if I buy in large quantities?" I told him frankly that my income would not permit careless buying and that I desired to deal with him if he would co-operate with me.

Here is one result: The next time I ordered navy beans and the necessary bacon, he sent end pieces of bacon instead of the usual slice (a very small slice at that) and a note saying, "this will do just as well and is much cheaper." Then I talked with my butcher. I asked him what cuts of meat would work to good advantage in my family. I told him just how much I had to spend on meat a week. He explained profit and loss, meatily speaking, so that now I am able to have meat four days a week, one of them being soup day.

To be sure we frequently have meat every day of the week, but that is because I work the meat leftovers into combinations. And when I say one soup day I don't mean that there is only one, but there is one day for an old-fashioned vegetable or noodle soup. On other days I make poor-man's soup, tomato soup, potato soup, or one of a number of varieties that may be made without meat.

Have you ever heard of the poor-man's soup? I was unfortunate enough not to know of it until one year ago, when enlightened by a Hungarian friend. Some of you may also be in the dark as to this really delicious soup. While it has a real recipe, the result is largely due to the ingenuity of the cook. This is the way it was given to me: Cut all the vegetables in small pieces (everything you have, including leftovers from canned goods) and cook together in slightly salted water until tender. Take meat fryings or butter (lard or snowdrift may be used, altho not quite so palatable), add flour and brown slightly, then combine with the cooked vegetables until you have a rich, creamy soup. Season to taste. You will learn by experience how much of each vegetable to use, as too much onion, cabbage or turnip will spoil the flavor. Sometimes I open a can of tomatoes, using a very little in the soup, as this also is too strong to be used carelessly, and use the remainder as sauce for macaroni and in meat leftovers.

Years ago a farmer's wife said to me, "it's just as cheap to have a variety as to always serve the same things." When I first began my campaign of good management, or economy—it doesn't matter what you call it, it all means the same thing—I found there was a tendency to monotony in the food. In fact one member of the family said, "I hope this war stops pretty soon, I am getting so tired of the same things," and then I woke up to see where I lacked. In my zeal for economy I had neglected to take into account the human need of variety in food, and I found, as this woman had said, that it was just as cheap to have a variety as to serve the same things until they became less than tasteless.

This is where the woman in the country has to be very thoughtful in her buying. If she has not been fortunate enough to have her own fruit, or it is spring, and the winter's supply has given out, she must depend on dried or canned fruits, because we

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Kernels of Swadley's Yellow Dent, Actual Size

On Corn Growing in Colorado

EXTRACTS FROM A RECENT EXTENSION BULLETIN

"Growing Corn in Colorado," is the title of Extension Bulletin No. 115 by Prof. Alvin Kezer, just issued by the Colorado Agricultural college, for free distribution among the farmers of the state. Following are quotations from this bulletin:

COLORADO has never been considered in the corn belt, yet, its corn acreage has been steadily increasing. This is well illustrated when we consider that in 1909 the average was 326,559. In 1915 this acreage had grown until, in round numbers, it amounted to 470,000 acres. If we make a comparison of corn yields in Colorado with those of the corn belt, Colorado will not seriously suffer from the comparison. Taking a ten-year average, as reported by the bureau of statistics of the United States Department of Agriculture, we find that the average yield has been 21.2 bushels to the acre. During the very dry year of 1911 the average yield per acre was 14 bushels. During the dry year of 1913, which was nearly as severe as 1911, the average yield was 15 bushels per acre. In 1915, which was a very wet year, the average yield was 24 bushels per acre. The total annual corn production in Colorado in 1915 was, in round numbers, 11,280,000 bushels. * * *

Corn as a Grain Crop

When we consider corn as a Colorado crop we cannot lose sight of the great diversity of Colorado. About two-thirds of Colorado is made up of mountains, mountain valleys, plateaus and mesas; nearly one-third is occupied by the plains, which extend from the foothills of the Rocky mountains to the eastern boundary. The lowest altitude in the state is nearly 3,500 feet, at a point on the eastern boundary where the Arkansas river flows from Colorado into Kansas. From this minimum of 3,500 feet the altitude rises until, at numerous points in the mountains, it reaches above 14,000 feet. As a result of this wide diversity of altitude, the climate is highly variable. The natural habitat of corn is a region of considerable moisture, hot days and not over-cool nights. While hot days are abundant in certain sections of Colorado, especially on the plains, the nights are nearly always cool. Consequently, corn never attains the size that prevails in the corn belt. As a consequence of the altitude, the seasons in all parts of Colorado are short, running not over 150 days between frosts in localities of greatest heat. At many points on the plains the season is not over 90 days free from frost. As a result of this short season, corn for the production of grain, to be successful in Colorado, must be able to mature in a short growing season. Practically all of the Colorado plains are producing corn as a forage crop.

The localities on the plains where corn is more successful as a grain crop are the sections around Haxtun, Fleming, Paoli, and Holyoke, in northeastern Colorado; about Wray in eastern Colorado, and along the Arkansas valley. Certain sections of the Divide region are also successfully producing corn as a grain. Corn as a grain in the mountainous regions is limited to the lower and hotter valleys and mesas, which are favorably located as to the slopes so as to give a long season, comparatively speaking, free from frosts and a rather high daily temperature. Such conditions are usually found at altitudes below 5,000 feet. This same statement may be applied also to the plains. There will, however, be found limited localities where corn may be grown successfully for grain at somewhat higher altitudes than this. Such localities, however, are favorably situated with favorable slopes, topography, and air drainage and other features that tend to give the altitude a climate somewhat longer and warmer than their elevations would indicate. Corn, as a dry land crop on the plains and in the mountain valleys, is seldom grown successfully where the normal rainfall is less than 15 inches. In other words the lower limit of rainfall where successful production ceases, is about a normal of 15 inches. * * *

With a good water right, corn under irrigation may be grown wherever the season is sufficiently long. In the Arkansas valley, especially under irrigation, corn has steadily increased in favor as a cultivated grain crop. The grain is both fed and sold. The season in this valley is not only hotter but is longer, making the climate much better adapted for high grain production. There are other irrigated sections of the state and there are many mountain valleys and mesas where corn may be successfully grown as a grain. * * *

Corn as a Forage Crop

As a forage crop corn may be produced up to elevations of about 7,000 feet. In limited localities favored by slope, shelter and topography, forage corn may be produced as high as 8,000 feet. In all of the northeast plains, in that section of Colorado lying north of a line thru Colorado Springs, corn is probably the best annual forage crop to be found. Not only is this true because corn is well adapted to the region itself, with its summer rainfall, but also because of the fact that it produces a very large amount of feed which is easy to harvest, is of high food value, and is relished by livestock. In the past the standard method of saving corn for forage purposes was to cut the crop as fodder and corn stover. The tendency, however, at present is to increase the use of silos for storing the crop. This will insure feed for stock from one season to the next.

The silo saves from 90 to 95 per cent of the total feed value of the crop. When corn is cut for fodder it dries in the field. The waste or loss from weathering, mechanical loss, and reduced palatability sometimes amounts to as little as 35 per cent, and sometimes rises to as much as 80 per cent. Usually not over 20 per cent of the food value produced on the land actually reaches the animals which are fed on dry fodder therefrom. The silo absolutely shuts off this loss, and enables the food value to be almost completely saved. It also puts the forage in a highly palatable condition. * * * Corn as a forage crop usually produces from 10 to 20 tons of silage per acre from irrigated regions, and from two to eight tons of silage per acre from dry land regions.

Varieties

The corn-growing climate of Colorado is short. The varieties adapted to Colorado conditions are mostly early maturing. There are a great number of these varieties found in the state. Some were introduced by farmers. Others are aboriginal, being grown by the corn-growing Indians of previous Indian semi-civilization or barbarism. Many of them have been imported. Some have originated by adaptation in different neighborhoods. Owing to the diversity of conditions there are 150 to 200 varieties to be found within the state. Only a few of these have distinct well-known names. Our observation would lead us to believe that many of the neighborhood varieties, if they were given proper care and properly handled, could be made distinct and valuable sorts. This has not been done. But it shows the possibilities of the crop for adaptation and improvement under widely different conditions.

Only a few of the better of these corns can be mentioned.

Swadley Dent: This variety originated in Colorado near Broomfield, about thirty years ago and has been grown continuously in that neighborhood ever since, as well as in many other districts of the state. Swadley Dent is the result of crossing some Yellow Dent variety probably with White Australian Flint. The variety at present may be best described by saying that the ear is small. The kernels on the ear are yellow with a white cap. They have the appearance of being rather broad for corn. The cob is rather coarse. The variety is early maturing. It probably grows and does well under as great a variety of conditions as any other variety of corn produced in Colorado. For a number of years it has been tested at Cheyenne Wells. It has been at or near the top of the list for a series of years for grain and forage. It is used for a forage crop at this dry land station.

Parsons' High Altitude Corn: Parsons' High Altitude corn originated in Colorado, near Parker. It was brot out by Mr. E. R. Parsons, a well known dry land farmer. It is the result of a cross made between White Flint and possibly an early maturing strain of Iowa Silver Mine. The result is a white corn which matures in a very short season. It is very hardy and unusually well adapted for the high divide section lying east of Palmer Lake.

White Australian Flint: In White Australian Flint corn the ear is very long and slender. The kernels are rounding, smooth and extremely hard. This corn is very hardy. It is one of the earliest, if not the earliest, variety adapted to general production in the state. It will grow in extremely dry situations, tho it responds well to improved culture. The greatest objection to this variety is not its yield so much as its habit of growth. The ear is produced very close to the ground; the higher the altitude the closer to the ground.

Kernels of White Australian Flint, Actual Size

Alfalfa With a Nurse Crop

I am on the Two Buttes Irrigation and Reservoir Co. ditch, a Carey Act project, 45 miles inland south of Lamar, Colo. This is upland, a chocolate loam, 16% sand, rainfall averages 15 inches. The discussions run here in three lines. Some say good stands are obtained by planting alfalfa with wheat, mix the seed and plant together. The majority say that is a poor way. Another group say it is most profitable to plant oats, speltz or barley light in spring, say two pecks, then when crop is up six inches sow alfalfa with a hand seeder and harrow it in. Other good farmers say it is a poor way—that you can't make a good stand of alfalfa come with a nurse crop.

Another group say you will always have a crop of weeds grow with your alfalfa and a nurse crop gives you a money crop in place of weeds.

As this is a new country tumble weeds blow each fall; thousands of acres run to weeds, so you can't protect yourself against it now, and the first cutting of new alfalfa here is generally weeds and raked up and burned. —A. E. Padden, Two Buttes, Colo.

The above letter was submitted to Prof. P. K. Blinn, alfalfa specialist of the Colorado Experiment Station, and his discussion of the points involved is as follows:

Seeding alfalfa with or without a "nurse crop," is a somewhat mooted topic for discussion. There are plenty of instances where either method has been a success or a dismal failure, according to the conditions that may have prevailed at the time.

Going back to first principles, every thoughtful man knows that grain or weeds growing with young seedling alfalfa is of no direct advantage to the alfalfa development, but on the other hand, is more apt to be a decided detriment to the alfalfa, on account of the tax on soil moisture that weeds or grain will require.

There are two objects in seeding alfalfa and grain together as companion crops: First, to secure a profitable crop of grain while the alfalfa is becoming established. Second, to prevent weeds from occupying the ground and choking out the young alfalfa.

Seldom is there a field so free of weed seed where alfalfa can be sown alone, where it will develop uninjured by weeds. Usually the first growth where alfalfa is sown alone, is a mass of weeds with a few spears of alfalfa. Where the alfalfa is started early enough to get ahead of the weeds and the weeds are such varieties as not to seriously crowd the alfalfa, and there is plenty of moisture for both to thrive, the alfalfa stand may be a success.

Under the same conditions, if a light seeding of grain should have been sown early with the alfalfa, before the weeds had started, and there had also been plenty of moisture for both the grain and alfalfa, the result would have been a good crop of grain, and just as good a stand of alfalfa as the stand secured with the weed crop.

The whole question of success in seeding alfalfa with grain hinges on three points. First, having plenty of moisture; second, seeding early enough so that the grain and alfalfa can get well started before weeds make much of a start; and, third, seeding a light rate of grain, not over fifty pounds of grain and usually better with a lighter rate of seeding. If there is plenty of moisture alfalfa can be sown as early in the spring as grain.

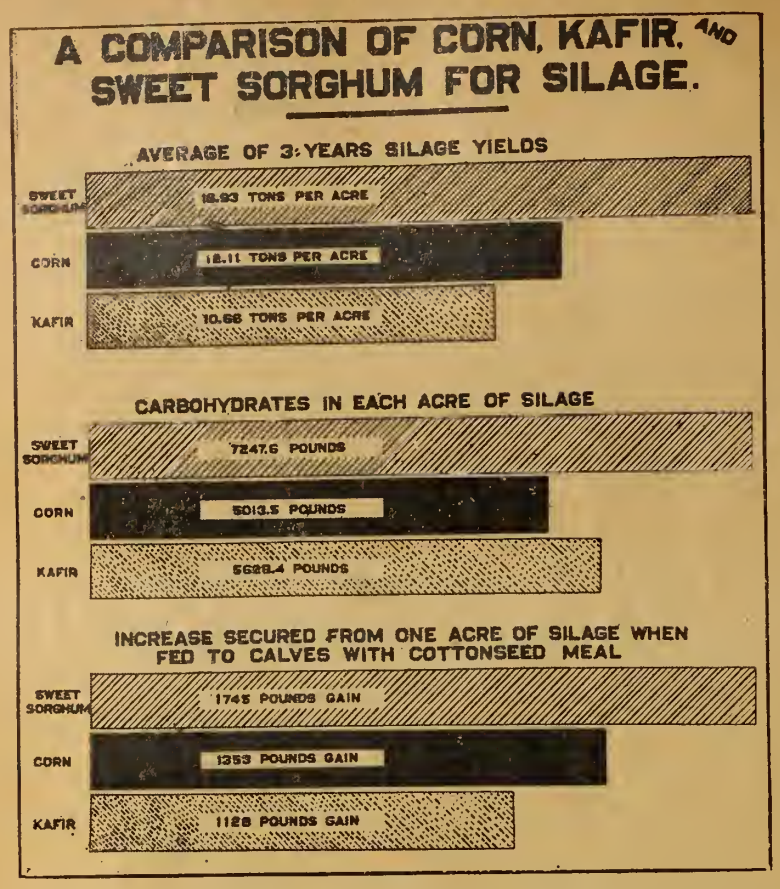
Alfalfa on dry land should be sown in rows without grain, and weeds eliminated by cultivation.

Alfalfa is not injured by frost if the ground is wet. I have seen alfalfa just out of the ground withstand a freeze that killed out a stand of beets.

In my opinion, from a wide observation, I believe moisture is the greatest factor of success in getting alfalfa started. There can be too much moisture. Under ditches where water can be had early there is no trick in securing a stand of alfalfa if it is seeded early, irrigated if necessary, and then not allowed to suffer for moisture.

In regard to seeding alfalfa with grain, they should never be sown together in the same seed sprout. Grain should be sown two or three inches deep; alfalfa should not be sown more than an inch deep as a rule. Alfalfa should be sown as early as the grain, except in the case of winer or fall grain. The alfalfa can be sown early in the spring by broadcasting in the fall grain, and harrowing the seed to cover it. Probably nine-tenths of the alfalfa in the state of Colorado has been sown with a grass seeder attachment in front of a drill broadcasting the seed at the same time the grain was sown.

There are all kinds of experiences in seeding alfalfa, but the way the majority succeed is usually best to follow. Under irrigation, seed early, seed shallow, seed on firm seed bed, seed with light seeding of nurse crop, seed when moisture is reasonably sure.



IN a three-year test made on the Kansas State Experiment Station with corn, kafir and sweet sorghum as silage, sweet sorghum proved its superiority over the other two crops in every way by showing a greater tonnage, a greater percentage of carbohydrates in each acre of silage and a greater gain when fed to calves with cottonseed meal. The chart below gives the results in graphic form.

The test was made with Kansas Sunflower corn, standard blackhulled white kafir and Kansas orange sorghum. The crops were grown on typical corn land. The average production for the three years was as follows: Corn, 12 tons silage; kafir, 10½ tons silage; sweet sorghum, slightly less than 17 tons per acre.

The test was scarcely fair to kafir, as the crops were grown on land best suited to corn. On upland kafir probably would have shown a greater tonnage than corn. In fact, in the last of the three years kafir and corn were grown on upland, and kafir exceeded corn by one and one-half tons per acre. It is significant that when the crops were grown on upland, kafir made nearly as much tonnage as it did on bottom land, while the corn yield was almost cut in half.

In the feeding test corn, kafir and sweet sorghum silage were fed with cottonseed meal. Calves fed on the corn combination made a total gain of 1,528 pounds and ate approximately 13½ tons of silage. On kafir silage the total gain made was 1,627 pounds and the calves ate 15 tons. On sweet sorghum the total gain was 1,584 pounds and the calves ate approximately the same amount as those which were fed kafir silage.

Making this comparison on the acre production basis, rather than on the tonnage basis, the results would be as follows: An acre of sweet sorghum yielding approximately 17 tons of silage, would produce 1,745 pounds of gain. An acre of corn silage yielding approximately 12 tons of silage would have produced 1,353 pounds of gain. An acre of kafir yielding 10½ tons of silage would have produced 1,128 pounds of gain. Thus an acre of sweet sorghum silage produces 23 per cent more gain than an acre of corn silage and 35 per cent more gain than an acre of kafir silage, because of greater yield.

These experiments were conducted under conditions that differ radically from those prevailing in the mountain states, where each locality has its peculiar variations of climate and rainfall to contend with. On the plains, however, and especially in southeast Colorado, it has been well established by farm practice that both sweet sorghums and grain sorghums yield a greater tonnage and are surer under drouth than corn.

Put on Shoes

I have two fillies two and three years old, both have strained hind ankle and caused enlargements—one in front of fetlock joint or ankle, the other on inside between feet. How can they be removed?—J. E. C., Colorado.

I presume the enlargements are due to effusion in the bursae of the joints, or what is commonly called "wind puffs." These are usually caused by strain of the back tendons and not by direct injury. Unshod horses that have a long toe and low heel are most liable to this condition because of a continual strain on the back tendons. Hard road work, in horses that are not predisposed by bad conformation, is very sure to cause these objectionable blemishes. In acute cases they amount to more than blemishes and are responsible for serious lameness, knuckling at the pastern joint, and serious deformity of the leg. It will be well to apply shoes, slightly raised at the heel. Liniments, bandages and blisters are to be considered.—G. H. Glover.

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The Eyes of America Turned on Her Farmers

AT last the American farmer occupies his rightful place in the esteem of the world. Manufacturers, merchants, bankers and city dwellers of all kinds heretofore have taken their food for granted and have overlooked the man behind the plow—the man who feeds them.

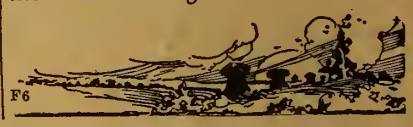
Conditions today are such that the *producer* of foodstuffs is recognized as the mightiest force—not only in the welfare and prosperity of the nations of the world but in the very existence of nations and their peoples.

A noticeable feature of the situation, which has shown the American farmer to be on a high moral plane as well as holding an important industrial place is the fact that he has *not* taken advantage of conditions to extort unreasonable prices from his fellow Americans. He has patriotically increased his production in order to prevent famine prices instead of keeping production down to force prices up.

He has shamed the food speculator—though unfortunately his example has not been followed by all manufacturers—particularly among the makers of so-called luxuries; though many big manufacturers in this country have followed the farmer's lead.

One of the most noticeable cases among those who have kept faith is that of the makers of Coca-Cola. In spite of the enormously high price of cane sugar—the principal ingredient of Coca-Cola—and in spite of the higher cost of its other ingredients the Coca-Cola Company have not raised the price to consumers nor lowered the quality of that delicious and refreshing beverage one iota. Like the farmers they have kept faith with the people to their own cost.

Perhaps the lessons of fair-dealing and helpfulness that the heads of that institution learned as boys on the farm (for they are products of the soil) have strengthened them to stand firm in this crisis. So let us remember that the beverage Coca-Cola, known as the National Beverage because of its great popularity, has proved itself indeed national by doing its bit to keep down the cost of living.



"The Old Lines"

EVERYBODY speaks of them as "the old lines," many perhaps without realizing how thoroughly new and up to date are all these **Champion, Deering, McCormick, Milwaukee, Osborne** and **Plano** mowers, rakes and tedders. What really good improvement was ever made in haying machines that did not show itself first on one of these machines? Where can you find mowers, rakes, or tedders that need so little adjustment, so few repairs, or that are so easy to repair when they do need it? Nowhere. These old standard machines, known to farmers for three quarters of a century, can still be depended upon to get in all the hay from any field and to make the work light for the farmer.

When you need a mower, rake, or tedder, see the local dealers who handle the **International Harvester** lines. We can remind you here that our machines have always done good work, but the dealer can show you why they still do it. You will find that the local dealer has just the size and style you need. Buy from him.

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The Dry Farm Garden in Summer

E. R. PARSONS

Gardening without irrigation is simply intensified dry farming on a small scale and depends mainly on conserved moisture, the first aid to which is, as anybody knows, deep plowing. Deep spading, however, is just as good, perhaps better; for a good spader turns everything.

F. W. Haupert at Bennett, Colo., is said to have the best garden in the dry farming country. He plows it 18 inches deep and fertilizes by disking the manure into the soil before it is plowed under. With this depth of plowing he conserves more moisture than the vegetables can use up and the consequence is, that when the hot weather comes, instead of wilting, they grow. He now has five feet of moist soil for the roots to work in.

Good fertilizers for the garden are leaf mold from a grove, the cleanings from the chicken houses and old black corral dirt. In using this latter the top must be scraped off or the garden will be full of cut-worms, for the miller moths are addicted to laying their eggs anywhere in litter.

When it is necessary to fertilize after the plants are up and growing, it can be done by placing a sack of chicken fertilizer in a barrel of water and using it as indicated.

No manure in the garden should be on the surface at seeding time. It should be down below out of sight, where the roots will get the benefit of it after a while. Any loose stuff on the surface allows the air to enter and keeps the top inch dry, which is fatal to seeds.

Some who have not yet acquired a windmill and tank, but are enterprising enough to try to reinforce nature with the help of a sprinkler and the old oaken bucket, should remember to rely upon hoeing and curb their enthusiasm as much as possible until the real hot weather commences; for otherwise the plants will root on the surface and depend on the water, and even then will wilt badly every hot day. But if water is withheld until later in the season the roots will follow the moisture downwards, and if any moisture has been conserved they will find it, and need little or no surface watering.

The most economical way of watering squashes, cucumbers, tomatoes, etc., by hand is to sink empty cans after their bottom end has been perforated, close to the stems of the plants and pour the water in these. The water goes in deep, the roots go after it and it lasts a long time for not a drop is wasted.

Lettuce is hard to raise in summer without some shade—two bricks and a board will provide it. Peas should be planted as soon as the frost is out of the ground and perhaps one planting later, for they do not flourish after the hot weather commences; but beans may be planted in relays, and will last until frost. Pole bean plants bear longer than the bush varieties and they may be raised without staking, by just pinching off the runners.

Cabbages and cauliflowers are hard to raise since they require more moisture than almost any other garden stuff. Tomatoes once started are easy to raise with plenty of hoeing; but like everything else must have plenty of room. Asparagus and rhubarb should be in every dry farm garden. They come up from the root every year and are ready for the table long before any dry weather commences.

Turnips for winter may be planted as late as July 1st. The flat purple top is one of the best. Carrots, beets and parsnips usually do well on a deep seed bed with plenty of hoeing, and should be planted early.

The best dry farm lawn is made from alfalfa planted thickly and caused to mat by keeping it down with a lawn mower. It should be started about the middle of April, but with watering conveniences may be planted any time up to August.

Every farmer should have a rain-water tank or at least some barrels to catch the run off from the roof in wet weather. For some household purposes there is nothing like rain-water and for flowers and plants of all kinds it is immensely superior to well water.

This Car Stays New

IN the latest Mitchells, every vital part has 100 per cent over-strength. We have doubled our margins of safety.

The safety parts are oversize. The driving parts are built of Chrome-Vanadium. The gears are tested for 50,000 pounds per tooth. The springs are tested, so that in two years not a single rear spring has broken.

The result is a lifetime car. It has proved itself capable of 200,000 miles of service.

Rare Features

The bodies are built in our own plant, to last as long as the car. The finish coats are fixed by heat—in enormous ovens—to make the finish enduring.

We use a rare-grade leather.

There are also 31 features—like a power tire pump—which nearly all cars omit. You have never seen a car so complete.

No Extra Cost

These extras cost us on this year's output about $4,000,000. But note that Mitchells undersell most cars without these extras.

That fact is due to factory efficiency. Nowhere else could cars like these be built at the Mitchell cost.

John W. Bate, the efficiency expert, built and equipped this entire plant. He has spent years on the plant, and millions of dollars, to produce this one type economically. What he saves in this way pays for these added attractions.

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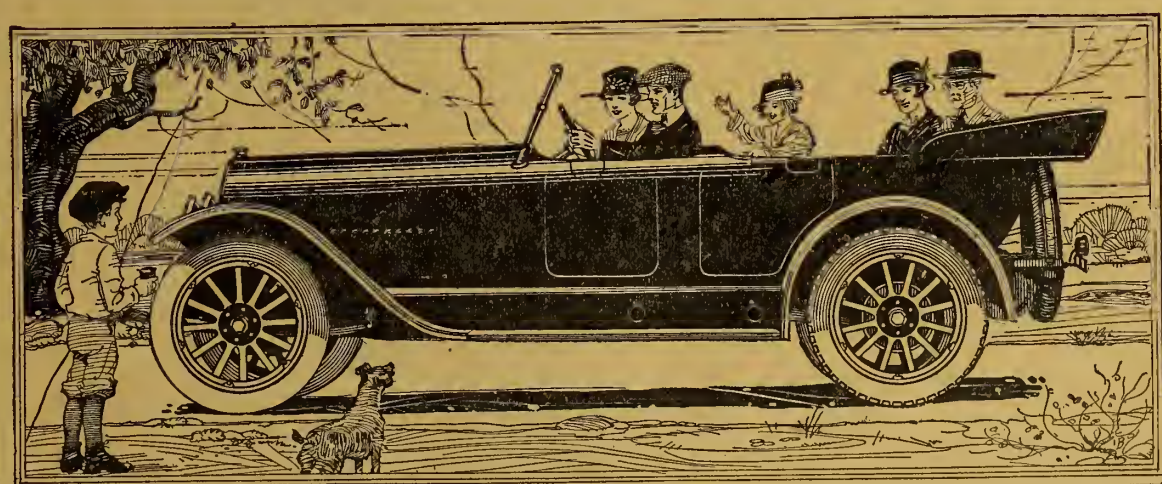

Dates for Silo Meetings

Dates for silo meetings by the Extension department of Colorado Agricultural college are announced below. These meetings are of great importance to the farmers of the plains region, many of whom have put in a large acreage of forage crops. Milk is one of the most important of food products and in order to maintain the supply some means of conserving the feed for winter use must be provided. The silo affords the most economical method. Every detail of silo construction and silage making and feeding will be explained at these lectures by the experts from the college.

Meetings are to be held as follows:

Weld County—Grover, June 8.
Logan County—June 11.
Sedgwick County—Sedgwick, June 12th.
Phillips County—Holyoke, June 13.
Morgan County—Adena, June 14.
Washington County—Akron, June 15.
Yuma County—Yuma, June 16.
Adams and Arapahoe Counties—Bennett, June 18.
Kit Carson County—June 19.
Elbert and Lincoln Counties—Limon, June 20.
Cheyenne County—Cheyenne Wells, June 21.
Kiowa County—Eads, June 22.
Crowley County—Ordway, June 23.
Otero County—Timpas, June 25.
Bent County—June 26.
Prowers County—June 27.
Baca County—Springfield, June 29.

Exchange Tractor Work

"Help your neighbors," is the keynote of a special appeal to tractor owners issued by Assistant Secretary of Agriculture Carl Vrooman. "Every farmer who owns a tractor," he says, "owes it to his country this spring to do all the custom or exchange work he can do without neglecting his own work. Every hour that his tractor would otherwise be idle it ought to be at work helping a neighbor who is behindhand with his plowing or harrowing. Make your outfit work from dawn to dark; make it work all night if you have enough operators to fill the shifts. The acreage to be harvested this fall hangs on the plow. Don't let an acre that might otherwise be planted go untilled because your tractor is in the shed. Help your neighbors and thus do your part in strengthening the allied lines on the battle fronts of Europe."

Establishing a R. F. D. Route

Would you please tell me how many miles it requires for rural free delivery of mail? How many boxes? How many names? How would I go about it to get a route?—G. W., Colorado.

The Denver postmaster advises that there is no ironclad rule regarding the establishment of rural routes. Get a small map showing sections and townships, indicate on the map the location of residents to be served, get up a petition signed by all those living upon the proposed rural route and desire same and send map and petition to Fourth Assistant Postmaster General, Washington, D. C. You should have a list of at least fifty farmers on the route.

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Five Appraisers Are Busy

On May 17th the following telegram was sent to President D. F. Callahan of the Federal Land Bank of Wichita, Kan., which serves the eighth district, comprising the states of Kansas, Oklahoma, Colorado and New Mexico:

"Colorado farmers demanding action on loan applications. When can they expect money. How many appraisers are working in this state? Wire what announcement we can make to prevent withdrawals of applicants who must have cash for this season's operations.

"(Signed) WESTERN FARM LIFE."

This telegram brot a prompt response stating that Mr. Ralph Voorhees, treasurer of the bank, was then on his way to Denver. On Mr. Voorhees' arrival he brot news to the effect that five appraisers had been named for Colorado and that they would begin work at once. It was learned also that R. T. Ambrose of Fort Morgan, who had been named as the Colorado appraiser, had resigned because his business would not permit him to give all of his time to the work. The five men appointed as appraisers are: A. D. Wall, Denver; Frank B. Davis, Denver; John Lennox, Colorado Springs; J. D. Bowman, Rocky Ford; J. U. Harris, Grand Junction.

These appointments are made on the per diem basis, the men being paid at the rate of $8 a day and expenses. Authority has been given from Washington to appoint five more on the same basis, if it becomes necessary. From these appointments the final list of permanent appraisers will be made up, as not so many will be needed after the system is once in working order.

Mr. Voorhees stated to Western Farm Life and again to the Farm Bureau of the Denver Civic and Commercial association before which he appeared, that the officers of the bank realize fully the necessity for getting the money to the applicants quickly. The Wichita bank was the first in the United States to be fully organized and the first to put out money, this going to Kansas applicants. Delay in Colorado has been due largely to the fact that certain associations were making requests for loans for what the bank officers considered excessive amounts, considering the character of the land. Discussion over the applications from one of these associations consumed much time, and caused delay in reaching the applications of other associations that are placing conservative values on their lands. The latter part of May, however, 28 Colorado associations had their applications in shipshape and the five appraisers were assigned to begin work on these at once. These 28 associations are asking $1,325,000 in loans. Some 200 associations have been formed in the state.

Attempts to cast discredit on the federal farm loan system are still being made. A Colorado money lending concern is circulating a printed statement taken from the Marion (Kan.) Record, containing a number of absolutely false statements. Farmers who may happen to receive copies of this are urged to send same to us, giving the source of the information, and we shall take whatever action the circumstances justify, as the firm in question is a member of a responsible bureau which seeks to protect the public against any misrepresentation or fraud.

Another matter that has come to our attention is that of lawyers attempting to get fees out of farmers for examining abstracts. Such examinations are made free of charge by the attorney for the Federal Land bank at Wichita. One instance that has come to our notice is that of a lawyer who, in addition to a fee of one dollar for preparing the applications for each individual member of the association, also charged each member from $3 to $8 for abstract examination.

One of the objects of the law is to give the borrower an opportunity to avoid incidental expenses. In the particular case above mentioned the secretary-treasurer of the association is a banker, who turned over these duties to a lawyer. The lawyer is not a member or an officer of the association, nevertheless, borrowers felt themselves obliged to go to him for service that should have been performed by their secretary-treasurer, for whatever pay the association might decide. Farmers are urged, in case of abuses of this kind, to take the matter up with Western Farm Life or write direct to Ralph Voorhees, Treasurer Federal Land Bank, Wichita, Kan. Prompt effort will be made to adjust the matter. We realize the difficulties under which the bank is laboring in getting things under way and we are keenly alive to the necessity for getting money out to the farmers. The matter has been discussed across the table, not only with Mr. Voorhees, but also with Captain W. S. A. Smith, member of the Federal Farm Loan Board at Washington, and President D. F. Callahan of the Wichita Bank. We believe the kinks have been pretty well straightened out and that early action on Colorado loans may now be expected.

✦ ✦ ✦

What About This Road?

It is a little out of the usual course for us to take up a question that, at first sight, seems to concern tourist traffic more than agriculture, but the circumstances justify fully the deviation from rules. The other day the writer had business in eastern Arapahoe county that took him over the main auto highway running eastward out of Denver. Business has taken the writer over the highways and byways of Colorado and neighboring states many, many miles. In all his journeys, however, he has yet to find a so-called highway, or main traffic artery leading to and from a business center, that can compare in unfitness for travel with the Denver auto road to Watkins, Bennett, Strasburg and on eastward to Limon.

Out Limon way the people are seriously considering the erection of a big roadside sign, to warn tourist traffic from Kansas and other states eastward, to turn toward Colorado Springs, as the road to Denver is unfit for comfortable auto travel. No pretense has ever been made toward surfacing the road. It shows no signs of having been dragged. It is just a dirt road, rutted and rough in dry weather, and boggy and almost impassable in wet weather. Crossroads connecting with it north and south thru Adams and Arapahoe counties are in far better shape.

Further description is not needed. Who is at fault, we do not know. The point we wish to make clear to Denver and its Tourist Bureau is that the condition of this road will offset to the extent of many thousands of dollars the good effect of tourist publicity given the state and Denver in the east. Every auto tourist who comes in via the east road will go back some other way, bearing with him the memory of the "worst stretch of road on the whole trip," and telling the story of it wherever he goes. It is a bad bit of advertisement for city and state.

✦ ✦ ✦

Don't neglect the family garden and orchard. Plan the garden crops as carefully as you do those for the farm and you will be astonished how it cuts the cost of living the year round.

✦ ✦ ✦

The trouble with cream when it will not "whip" is usually lack of fat. It should contain 25 per cent of fat, and not 15 to 20 per cent, as is ordinarily the case.

REGISTRATION DAY JUNE 5TH

June 5th has been fixed as Registration Day. On that day every man who has attained his twenty-first birthday and who has not yet reached his thirty-first birthday must present himself for registration at places designated by the various towns and counties thruout the United States. Those who are too ill to appear in person must do so by agent, according to instructions which have been issued thru the local press in every locality. Those expecting to be absent from the counties in which they make their permanent home must register by mail, and their registration cards must reach the proper officer at their home on or before June 5th. Registration hours shall be from 7 a. m. to 7 p. m. on the day named.

These are the brief details of the plan for the selective draft by means of which the United States will send an armed force to Europe. Severe penalties are fixed for any violation of the act, or any attempt at evasion on the part of those of the designated ages, or those charged with the duty of officiating at the registration.

From the proclamation of President Wilson the following is quoted:

The power against which we are arrayed has sought to impose its will upon the world by force. To this end it has increased armament until it has changed the face of war. In the sense in which we have been wont to think of armies there are no armies in this struggle. There are entire nations armed. Thus. the men who remain to till the soil and man the factories are no less a part of the army that is in France than the men beneath the battle flags.

It must be so with us. It is not an army that we must shape and train for war; it is a nation. To this end our people must draw close in one compact front against a common foe. But this cannot be if each man pursues a private purpose. All must pursue one purpose. * * *

It is in no sense a conscription of the unwilling; it is, rather, selection from a nation which has volunteered in mass. It is no more a choosing of those who shall march with the colors than it is a selection of those who shall serve an equally necessary and devoted purpose in the industries that lie behind the battle line.

The day here named is the time upon which all shall present themselves for assignment to their tasks. It is for that reason destined to be remembered as one of the most conspicuous moments in our history.

It is nothing less than the day upon which the manhood of the country shall step forward in one solid rank in defense of the ideals to which this nation is consecrated. It is important to those ideals no less than to the pride of this generation in manifesting its devotion to them that there be no gaps in the ranks.

It is essential that the day be approached in thoughtful apprehension of its significance and that we accord to it the honor and the meaning that it deserves. Our industrial need prescribes that it be not made a technical holiday, but the stern sacrifice that is before us urges that it be carried in all our hearts as a great day of patriotic devotion and obligation, when the duty shall lie upon every man, whether he is himself to be registered or not, to see to it that the name of every male person of the designated age is written on these lists of honor.

In witness whereof I have hereunto set my hand and caused the seal of the United States to be affixed.

Done at the city of Washington, this eighteenth day of May, in the year of our Lord one thousand nine hundred and seventeen, and of the independence of the United States of America the one hundred and forty-first.

By the president: WOODROW WILSON.

ROBERT LANSING,
Secretary of State.

GRANGE NOTES

Eighteen new members have been taken in by Central Valley Grange and a literary and debating society has been organized.

Since God in His wisdom has seen fit to remove from our midst Sister Mary Nagel, we, the members of Central Valley Grange No. 200, extend our heartfelt sympathy to the bereaved family. Signed: Mrs. M. P. Mortensen, C. D. Haupert, H. C. Flanders, Committee.

Spring Creek Grange No. 202 have from two to six applications for membership at every meeting. They exchanged programs with Riverside Grange and installed the officers of that grange; also visited Montrose Grange. A co-operative store in Montrose handles their products.

Divide Pomona No. 5 met with Kiowa Grange No. 223 at Kiowa. The following granges furnished the program: Kiowa, Bijou 276, Harmony 211, and Harmony Juvenile. Charles Waldron, president of the Milk Producers' association, asked the farmers for their co-operation. Subjects of interest were discussed and six patrons received the Degree of Pomona. The next regular meeting of the Pomona will be June 5th, with Comanche Grange No. 207.

Fairview Grange No. 297 has had good attendance and taken in a few new members.

Rock Creek No. 300 held one meeting during April and discussed the rural route from Wiggins.

Rose Hill Grange No. 256 had an address by Dr. Abner Cobb. Senator Agnes Riddle will be with them some time later. The grange is prospering. New applications are received at every meeting.

Enterprise Grange No. 25 has organized a dramatic club and given some good entertainments. A hall will be built next winter if possible.

Colona No. 259 initiated five candidates last meeting and had a very interesting program of readings, music and debate. At the next meeting co-operation among cream shippers will be considered.

Tri-County Grange No. 264 had an average of sixty at their April meetings. A big dinner followed by an interesting program, drew a large crowd. C. N. Fowler, formerly of Chicago, spoke on "Food Preparedness."

Olathe Grange No. 243 held one meeting in April and had a program consisting of recitations and music.

Guy Hill No. 237 initiated five in the first and second degrees and six in the third and fourth. A good supper was served.

Box Elder Grange No. 232 held two meetings in April, with good attendance at both. Seven candidates were initiated. Members were very enthusiastic over the new hall.

Silver State Grange No. 171 held one meeting in April.

Crow Valley Grange No. 267, at their last meeting, had some talks on agriculture and good roads; also music, readings and debate.

Arlington Grange No. 250 held two meetings in April and had discussions on community work. Flora is to give a program soon.

Evergreen Grange No. 226 was entertained by Genesee Grange at one of their meetings. Evergreen returned the compliment in May.

Sunflower Grange No. 162 held two meetings in April and had a literary entertainment. On April 13th they gave a dance and cleared about $45.

Maple Grove Grange No. 154 held its last meeting for the summer on May 10th. They were entertained by the Henderson Grange. The losing side in the membership contest furnished the supper. State Master John Morris was present. Meetings will be resumed in the fall.

Darden Pomona Grange No. 1 will meet with the Wheatridge Grange on Saturday, June 2.

Nuff Said

Some time ago I put in your columns an advertisement of beans for sale. I received so many orders that I sold out all my beans over three weeks ago. Since then I have been returning anywhere from five to thirty dollars worth of orders a day. If they continue to come, I fear it will take all the money I received for beans to buy stamps to return extra orders. Will you not either publish this letter or request your subscribers not to send me any more orders for beans? This will save both them and myself much trouble.

H. H. Beckwith, Caddoa, Colo.

Comment by Farmer Putnam

OUR MISSOURI FRIEND GROWS POETIC OVER THE BEAUTIES OF THE RYE COUNTRY

Denver, Colo., May 27, 1917.

BEEN out with County Agent Smith ag'in. No, not George R.—he's married now; not Charles E. neither. This time it was Stanley V. This makes the third County Agent Smith I was out with lately and they's still one more—E. D., down in the San Juan country. I don't know when I'll git down that way; it's most too fur to walk and the railroad fare costs like the dickens. It ain't the cost that's a botherin' me so much as the long ride. A feller's apt to git seasick goin' over them mountains on the narrow gauge. Just be patient E. D., I'll be down that way some time to look you over.

This S. V. Smith is the agriculturist for Pueblo county. I used to wonder what they wanted with a county agent in the steel mill district and I guess S. V. did, too, when he first went down there to work. I reckon them business men in Pueblo found out they couldn't eat nails and barbwire so they decided to boost agriculture and applied fur one of Colorado's Four Famous Farmsmiths, and S. V. was sent to take the job. He used to be a college professor, but you'd never suspect him of it now. He's as common as a old shoe and he calls the farmers "fellers" and gits right out with 'em in the field or to eat chicken, as the case may be. He has forsook all his highbrow ways and it comes natural to him to be a farmer, because he was born on a Kansas farm.

Another feller that was with us was Roud McCann. Mac is the deputy state dairy commissioner and me and him and Smith (S. V.) went over to Rye to see a creamery which is run by the farmers. Mrs. Smith and Laura Margaret and her dolly, Pollyanna Smith, went along to fill up the Ford. Travelin' in a Ford is lots more comfortable when there's a load in the back seat, so's the rear wheels stays on the road. Mr. Smith has got a self-starter on his Ford; it works like a hand spray pump. You pull the handle back toward the body, give her a twist and then let her flop and off you go, spinnin' along the road like a fire wagon.

We got to Rye about dinner time and when we got thru refreshin' the inner man we went over to the creamery, which is as nice and clean a place as I ever seen. Mr. Swigart, the buttermaker, is a good hand at the business knowin' the ins and outs of cream handling and buttermakin'. After lookin' over the creamery we went to the hall fur a meetin' with the farmers. In lookin' over the audience I seen one familiar face. I kin allus spot a Missourian in a crowd. Missourians is just like magnets to each other. When they git close to a stranger that's from the old state they kin feel it and purty soon they're a chattin like old cronies. So when I seen I. N. Holler I just knowed he was from Missouri and when we got together after the meetin' he told me he was from Dade county. He sez he remembered me a vistin' some of them Dade county Putnams years ago and I reckon he's right. I didn't think nothin' in my younger days of goin' fifty and 75 miles from home to attend a corn-huskin' or a cider-pressin'. Them was good old days, wasn't they Mr. Holler!

I never seen a purtier spot then Rye and I sure felt to home among them farmers, all a noddin' at me cheerful like and pleasant. A feller don't feel like he is among strangers when he gits out in them small communities. It's a queer thing that the further a feller gits away from the railroad and the city the more friendly the people is. I reckon I'm funny that way. I kin walk around all day in a big city and feel durn lonesome and talk to nobody with thousands of people passin' me and rubbin' my elbows. But put me in a little village with a dozen or two farmers scattered around in front of the stores and the blacksmith shop—the garage, I meant to say—and the world looks big and sunny and cheerful, with everybody friends with everybody else and all of them a-talkin' to each other.

I bet if they weren't no big cities and no board of trade and no stock exchanges they wouldn't be no war. If all the people could live in green-sloped valleys like around Rye, half a day on the sunny side and half a day in the shade of Old Greenhorn, a listenin' to the ripple of the creek over the rocks and the singin' of the wind thru the pines, and the warblin' of the medder lark, and could see of a mornin' a haze risin' up like a pillar of fog from the blue tip of the hill, and by evenin' a rosy cloud settlin' like a sign of promise over the skyline, they would be too full of joy to go to war; too rich in love of life to kill their fellowmen; too prayerful to raise a hand ag'in any of God's creatures, let alone their brothers.

When I go to a place like Rye and I stand before the everlastin' hills and look up, and up, and up a wonderin' why, with all the eternal rocks, made fast by the hand of God in the bowels of the earth and towerin' toward the blue, tipped by the never-meltin' white of purity, then I wonder why man cain't be like the mountains. What does Old Greenhorn think of us? There he's stood fast fur ages and ages giving life to the forests that cover him from foot to white fringed crown; the forests giving shelter to birds and beasts, and leavin' a path fur springs and waterfalls, and never a quarrel to mar the harmony of nature. Don't it make you wonder why man ain't contented to do his duty like that and be unselfish and live his life without hating? It gives me a soberin' thot friends when I think of the war.

Josephine's bound that if any of the family goes it's to be me. She sez she needs the boys on the ranch and the world kin git along without my fool scribblin', and I reckon she's right. It ain't that I'm a-feared to go; nary a Putnam was ever a coward, but I reckon the doctors is bound to find out about my roomatic knee, so it won't be my fault if they don't take me.

Well, I been wanderin' off my topic. I furgot all about the Smiths and McCann and it won't do to leave 'em out to Rye, so I'll git 'em all in the Ford and then I know we'll git back to Pueblo. We got back alright; the Fords allus does.

THOMAS JEFFERSON PUTNAM.

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Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and thru the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Question of Contest

Does the fact that a person has failed to make his third year proof on a desert land entry at the expiration of the third year subject the entry to contest? Does the law which disallows an extension of time in order to put water on the land, operate against an extension for the purpose of putting on the third year proof when the entryman intends to prove up under the new law concerning such entries?—R. T., Empire, Wyo.

If all expenditures have been made, the failure to file the annual proof is not a ground of contest, but would cause the local land office to issue expiration notice and if not filed within the time the entry would be cancelled. If an extension of time is denied, this would subject the entry to cancellation if the proof was not filed within the four years allowed.

Road Is Permanent

Would like to ask if road across place that has been there for say twenty or thirty years can be changed and be made to go on the section line?—G. H. R., Maxey, Colo.

It is customary to consider a road permanent after it has been established for a period of ten years or more. However, there would be no legal bar to a change, if in the opinion of your county commissioners there were good reasons for changing the road to the section line. Decision in the matter would depend upon local conditions.

Farm Loan Question

Would like to know if there is any way to obtain a loan thru the Farm Loan system without being in an association. We are situated so that there are not enough people near us to form an association. We have a loan of $2,000 on our ranch and are paying 10% interest. It is a good loan and we have never failed to pay the interest when due since the loan was made, but we cannot afford to pay so much interest and if possible would like to get the loan thru the Farm Loan board.—J. W. S., Durango, Colo.

Yes, there is a way to obtain a loan thru the Federal Farm Loan system without joining a National Farm Loan association. The law provides that in any locality where it has been impossible to form such a local association, loans may be made to individual borrowers thru an agent to be appointed by the Farm Loan board. Said agent can be a state or national bank or trust ompany, etc. Such loans to individuals, however, cannot be made until the law has been in effect for a period of one year. (The law went into effect last July.) We understand the Farm Loan Board is not encouraging loans to individuals and it may be many months before any loan of this kind is made. Mr. E. D. Smith, your County Agriculturist, whose office is at Durango, can tell you about a farm loan association which has been formed in your county. If your land is not located in this county, write to Mr. Ralph Voorhees, Treasurer Federal Land Bank, Wichita, Kansas, for advice.

No Permanent Cure

We have a mare that has the heaves. She has not got it very bad, but seems to get worse all the time. Is there any way of curing her?—M. P., Nepesta, Colo.

There is no permanent cure, but the animal can be materially relieved by avoiding the causes, which are usually moldy feed or feed that contains considerable dust. Dampen all the feed given your mare, keep the stall and feed sprinkled so that she will not be brot in contact with dust and if practicable keep her in the open lot or under a shed instead of the barn. Feed little hay in the morning and do not allow her to do fast or hard work on a distended stomach; strictly avoid all musty or dusty feeds and restrict the amount of hay to much less than is usually fed.

Needs Strengthening Feed

I have a cow that has been down for 4 or 5 days. She seems to be unable to raise her hind quarters. Can get up about 6 inches and then falls. She was fresh about six weeks ago, is in fair condition having roughed it this winter. She eats good and seems to be all right otherwise.—C. B., West Plains, Colo.

You have hardly given a sufficient diagnosis to justify an intelligent answer. However, I assume that your cow is thin in flesh and needs good strengthening feed. See that her bowels are kept in good condition and that she is given good, clean hay and a sufficient quantity of concentrated feed, such as chop or any grain that you may have that you can feed her with safety. Also give her some succulent feed in the way of root crops. If necessary give her a quart of raw linseed oil and rub her back with mustard paste along the loins for about two feet. You can make this mustard paste out of pulverized mustard, mixing it up until it forms a thin paste and rub this in well.

Residence Not Required

I have 320 acres of land and filed on 200 additional which are 18 miles apart. Have I got to live on the additional one or just run stock on it? It is rough land and cannot be farmed.—J. P. L., Raton, N. M.

You are not obliged to live on the additional homestead, but can retain your residence on the original 320 acres.

Hand Feeding Lambs

Please give me quick information regarding the hand feeding of lambs; not only what to feed, but how to feed; frequency and amount; suggestions as to treating their bowel troubles.—S. R. M., Arco, Idaho.

Prof. E. J. Iddings of Idaho University advises as follows: "The best method of feeding is with the bottle and rubber nipple. The first two or three days the cow's milk should be given every two hours, at first only two or three tablespoonfuls at a feeding. Milk from a high testing cow is best. The bottle and nipple must be kept clean and sanitary and the milk warmed for each feeding to about 92 degrees fahrenheit."

Regarding bowel troubles: For constipation the authorities recommend an injection of soapy water, or raw linseed oil, followed by dose of castor oil. For colic, give one drop of laudanum, mixed with one dram of powdered ginger. Administer this in a little flaxseed tea.

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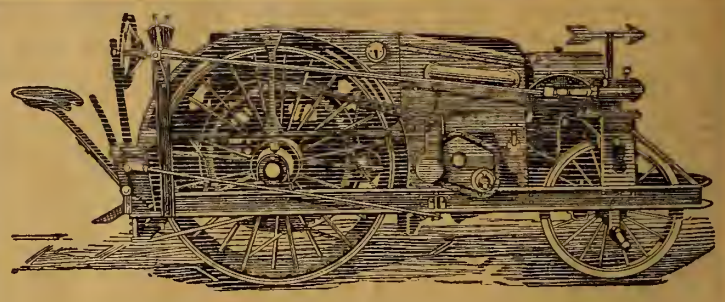

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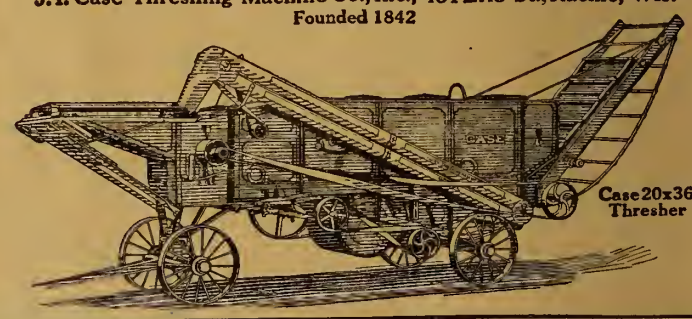

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Home-Made Cheese

Few Colorado people realize how asily cheese can be made at home. Vith war-time prices on all purchased oods, every farmer and ranchman hould add cheese to the list of homeade products. Nine out of ten peole in the West prefer the flavor f a green or uncured cheese to that f a well ripened cheese, and since he bulk of all troubles in cheesemaking are curing troubles, one need ot hesitate to undertake cheesemaking for use at home.

The equipment needed is very simple; a dairy thermometer; a wash oiler or similar vessel to heat the nilk in, and a round box about the ize of a peck measure, with two covrs which will slip into, instead of ver, the box, acting as presses on the heese. The covers should fit very oosely as they will swell while the heese is in press.

Not less than ten gallons of milk hould be used, unless a very small heese box is obtainable. You will et about one pound of cheese for very ten pounds of milk.

Heat the milk to 90° Fahrenheit and add cheese color if desired. Set the milk with enough rennet extract to coagulate in 20 to 30 minutes, as this will be about the right consistency of curd. Pepsin extracts may be used according to directions on bottle, instead of rennet extract, which is now scarce and very high in price. About four ounces of liquid rennet will do for a first trial, and if the milk coagulates too fast or slow, change the amount accordingly in making the next batch.

When the curd has formed, run the finger along just beneath the surface and when the curd splits or breaks cleanly over the finger, cut it lengthwise and crosswise into fairly fine particles; then raise the temperature one degree every three minutes until the temperature stands at 108°, stirring carefully all the time to keep the curd particles from matting together.

Now hold the curd at 108° until the curd no longer is mushy to the feel, but has a firm texture, then draw the whey and keep stirring until the whey is all out.

Salt with four ounces to every ten pounds of curd, and after working the salt well into the curd, put cheesecloth in the box with as few wrinkles as possible, and fill with curd.

Now rig a plank as a lever, with one end fast, and a weight on the other, and put the cheese box under this improvised press. Leave in the press until the whey no longer comes out, turning every twelve hours, and trimming the corners if needed.

Put in a cool place to cure, greasing the rind with olive oil or some of the when drained from the cheese. A 60° temperature is best for curing, but higher temperatures will not hurt if the cheese is to be consumed promptly. Turn and rub the cheese every day for at least two weeks before cutting for use.—G. E. M.

DAIRY NOTES

Among the bulls brought into Garfield county with the recent shipment of Holsteins from Wisconsin through the aid of the State Dairy Commission and County Agent, were four bulls from the John Erickson herd at Waupaca, Wisconsin, all sired by Sir Pietertje Ormsby Mercedes 37th, whose three nearest dams average 36.20 pounds butter in seven days, and more than a thousand pounds yearly. These young bulls are from tested dams with good yearly records. They go to Mr. J. T Bowles, Carbondale; Frank Dyer, Carbondale; C. E. Lewis, Silt; and Thomas C. Parkinson of New Castle. Two bulls sired by Colantha Johanna Piebe Parthenea, owned by Rudolph Schaefer of Appleton, Wisconsin, whose five nearest dams average 30.63 pounds in seven days and 1,070.18 pounds butter yearly, went to C. E. Wilson of Rifle and Dee Freeland of Grand Valley. Such sires as these will help to raise the production of Colorado herds.

The ten best cows in the Arkansas Valley Cow Testing association produced in February, an average of 53.45 pounds of butter fat. The ten poorest, an average of 8.49 pounds. The production of the ten best is more than two pounds of butter per day—an average worth trying for.

Wild Rye a Neglected Hay and Pasture Plant

(Continued from page 3)

can be obtained. As pasturage it will not bloat stock and will keep a large herd busy keeping it down.

(i) Even heavy snows do not break it down. Last September we had snow that played havoc with everything on the place except wild rye. This stood up. My cattle were tided over on it. To this writing, with snow a foot deep everywhere, even my cows are eating the grain and tops of the rye. My horses crop it down to the ground.

In a word, for farmers on dry plains, for farmers in high altitudes, where alfalfa is an experiment and Sudan grass will not grow, this family of giants should be put to work. The nearest species to you is the one to select; any one of them will do. It will give you an inexhaustible pasture, or a meadow perennial, from which two cuttings can be obtained the dryest years.

If we learn to live within our means we will solve one of the greatest economic problems which confronts the agriculturist of today.—Henry Jackson Waters, in the Country Magazine.

The U. S. Department of Agriculture is experimenting with the development of a frost-proof corn, that will stand earlier planting and resist early fall frosts as well. Here's wishing success.

Guaranteed to do more and better work with less power than any other; yet it costs no more to buy. Practically proof against breakdown. Solid oak and steel frame, mortised, bolted, braced; impossible to pull out of line. Spiraled knives give clean shearing cut, requiring least power. 10 lengths of cut (5/16 to 2½ in.). Frictionless self-feed table runs on chilled iron rollers. Speed of blower adjustable to least use of power for any height silo. One lever controls feed rolls and table. Automatic safety device.

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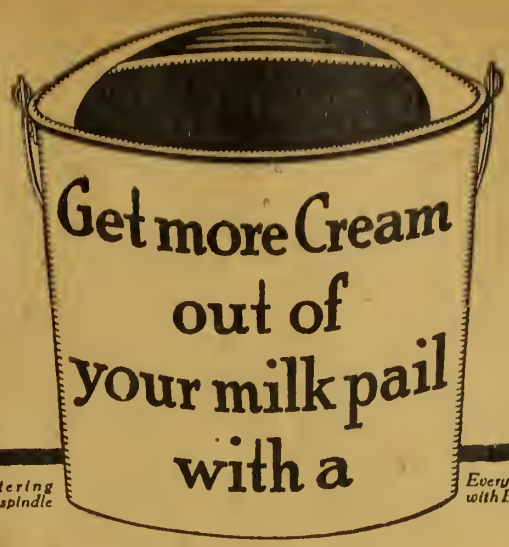

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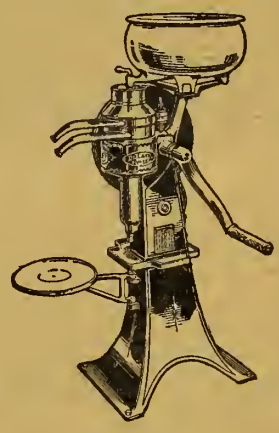
You certainly can't afford to feed butter-fat to the calves and pigs at from 30 to 40 cents a pound.

All sorts of "*claims*" are made for various cream separators, but what you are looking for is "*proof.*"

Here is the most convincing kind of proof that the De Laval is the cleanest skimming machine:

Fifteen years ago there were a dozen different makes of creamery or factory separators in use.

Today the creamerymen and large milk plants the world over use the De Laval almost exclusively. In fact, it's hard to find a large cream producer or creameryman who will allow any separator other than a De Laval in his plant, no matter what the price.



Why? Because they have found that it makes a difference of several thousand dollars a year to them whether a De Laval or some other make of machine is used. They simply can't afford to use any other machine.

This is proof of De Laval closer skimming that you can't afford to ignore. Even if you don't separate as much cream as the creameryman, you can't afford to waste it any more than he can.

Your local De Laval agent will be glad to let you try out a New De Laval on your own place. If you don't know the local agent, write to our nearest office for catalog or other information.

THE DE LAVAL SEPARATOR CO.
165 Broadway, New York 29 E. Madison St., Chicago
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

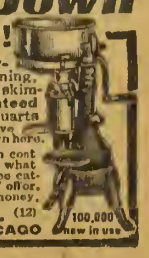
Try 100 POUNDS A AND C CALF MEAL

Test It Thirty Days to Prove Our Claims

Let us prove that you can sell your milk for three or four times as much as Calf Meal costs, and turn your calf loss into a profit. Order 100 pounds through your dealer or direct. Use it 30 days. **If you are not satisfied that it does what we claim, return unused portion and your money will be refunded.** It costs less to feed than any other standard meal or home mixture. Contains all nutriment necessary to keep the calf in good condition. Promotes healthy growth of meat and bone. A little added to poultry mash will make chicks grow quicker and hens lay better. Call on your dealer or write today. Sample sent on request.

ADY & CROWE MERCANTILE CO.
1900 Fifteenth St. Denver, Colorado.

Only $2 Down
One Year to Pay!
$24 Buys the New Butterfly Jr. No. 2. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime. Skims 95 quarts per hour. Made also in five larger sizes up to No. 8 shown here.



30 Days' Free Trial Earns its own cost and more by what it saves in cream. Postal brings Free catalog, folder and "direct-from-factory" offer. Buy from the manufacturer and save money.
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2129 Marshall Blvd. CHICAGO
100,000 now in use

The Farm Home

MRS. H. T. FRENCH

Questions about home problems promptly answered by letter and thru the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

JUNE.—To this rare month of which poets sing—the month of months, welcome! This is the month of roses, brides and sweet girl graduates. Forth from the wide open doors of schools and colleges steps the host of graduates—young men and young women prepared to begin life's work in earnest; but both as never before confronted with separation from friends and relatives; new struggles, new problems of duty and trying decisions to make.

To those who are not called to active service away from home and field we would say that the need on the farm is greater than ever before, and remember that Cincinnatus was found, not in the counting house, but at the plow.

Burns drew his inspiration from the heather and the hilltops.

Humboldt learned of the mountain solitudes the great truth that the universe is governed by law; and many a rugged country boy, born and bred where nature was his teacher, has become a shining light of America's political progress.

When a bit of sunshine hits ye,
After passing of a cloud,
When a bit of laughter gits ye,
An' yer spine is feelin' proud,
Don't fergit to up an' fling it
At a soul that's feelin' blue,
For the minute that ye sling it
It's a boomerang to you.
—Ex.

Strawberry Season

Excellent strawberry shortcake: Sift together 2 cups of flour, 2 rounding teaspoons baking powder, 1 teaspoon salt, 2 tablespoons sugar. In a measuring cup pour 2 tablespoons of melted butter, 1 beaten egg and enough milk to make one and one-fourth cups. Mix thoroly and bake in two round cake tins, or one long dripping pan. Split and place between layers and on top, strawberries (two quarts) that have been chopped and seasoned with plenty of sugar.

Strawberry Toast: Butter slices of crisp, hot toast and pour over them chopped strawberries, well sweetened. Place in oven to heat, but not cook. A nice breakfast or lunch dish.

To Can Strawberries So They Will Not Lose Color: Choose a variety of berry that is dark red to the core. Fill the jar, pour in sugar syrup to taste and place jars on cloth or rack in a boiler of warm (not hot) water. Let the water come slowly to a boil and boil 10 minutes. Remove jars and tighten the lids and store in cool, dark cupboard.

Desserts From Dry Bread

There are numerous puddings, both dainty and palatable, that will use up the bread crumbs.

Brown Betty: Place a layer of bread crumbs in a pudding dish and then a layer of sliced apples, cinnamon, sugar and a little butter. Alternate the layers until the dish is full. The top layer must be bread crumbs. Moisten the top with a little water. Cover and bake in a medium oven for an hour. Remove cover and let the top slightly brown before removing it from the oven. Serve warm with whipped cream.

Bread Pudding: Cover about a pint of bread crumbs with milk and let soak for about two hours. Add beaten yolks of two eggs, two tablespoons sugar, the juice and grated rind of a lemon and two or three tablespoons of dessicated cocoanut. Bake three-quarters of an hour in a slow oven. After it is done beat the whites of two eggs stiff and add one tablespoon of sugar. Frost and brown in the oven. Leftover jelly may be dropped here and there over the top just before sending to the table.

Bread and Butter Pudding: Spread thin, even slices of bread with butter and put alternate layers of them and sliced apples, seasoned with sugar and cinnamon, in a pudding dish. Pour on enough water to slightly moisten the whole and cover. Bake in a moderate oven one hour. Serve with cream and sugar.

Eggs

After milk there is probably no other article of food which is so valuable for mankind as the egg. The egg contains large quantities of albumen and fat and the amount of nourishment contained in an egg is said to correspond with that in 40 grams of fat meat and about 150 grams of milk. Eggs are easily and readily digested and better assimilated than most other foods. Quoting from "Health Thru Rational Diet," by Arnold Lorand, M. D.: Raws eggs are the most difficult to digest, since, owing to their fluidity they cause very little secretion of saliva, and are apt to coagulate in the stomach. Soft-boiled eggs are very much more digestible, and even hard-boiled eggs are not so indigestible as is claimed by many. As a matter of fact, hard-boiled eggs are often more easily digested than raw ones. (The author goes on to say, however, that the hard-boiled eggs must be well masticated.)

Spinach and Eggs: Leftover spinach can be made into a delicious luncheon dish. Cook until hard as many eggs as you have persons to feed. Cut the eggs in two, remove the yolks and fill the halves with well seasoned cold spinach; place in shallow baking dish, cover with rich cream sauce and finally grate the yolks over the whole. Brown in the oven.

Luncheon Eggs: Lay a neatly poached egg on a square of buttered toast and cover with a thick brown sauce. Make this sauce by adding to each half pint of stock a dessert spoon of walnut catsup, another of Worcestershire sauce, the same of lemon juice, half as much made mustard, one-half teaspoon grated onion (if liked), 1 teaspoon essence of anchovies, a dozen minced capers, and a "dust" each of cayenne and grated lemon peel.

Baked Eggs with Tomatoes: Place a teaspoon of tomato sauce in the bottom of an individual ramekin dish; lay on this a poached egg, cover with cream sauce, add a teaspoon of grated cheese to a gill of the sauce; sprinkle with more cheese and bake in a quick oven until brown.

Spanish Omelet: Beat four eggs slightly; add one-half teaspoon salt, a speck of pepper and four tablespoons of hot water. Heat three tablespoons of olive oil (or butter) in an omelet pan and cook the egg mixture in this until creamy. Fold in one-half cup of ripe olives cut in small pieces. Turn on a platter and serve with olive sauce.

Olive Sauce: Brown two tablespoons of butter; cook in this until brown 3 tablespoons of flour; then add 1 cup of highly seasoned brown stock. Add one-fourth cup of chopped ripe olives, and 1 tablespoon each of chopped green and red peppers.

Soft Cooked Eggs: Place eggs in boiling water, remove from fire and allow them to stand from 5 to 8 minutes.

Hard Cooked Eggs: Place eggs in cold water and when water boils remove from fire and allow them to stand 20 minutes on back of range; then put into cold water.

Poached Eggs: Break each egg into a saucer, slip the egg into boiling water (slightly salted); remove to cooler part of fire; dip the water over the egg with a spoon. When white is firm, and a film has formed over the yolk, the egg is cooked. Take up with a skimmer, drain, trim off the rough edges and serve on slices of toast. Season.

PATTERN DEPARTMENT

All patterns 10c each. Address WESTERN FARM LIFE, Pattern Department, 14th and Arapahoe, Denver, Colo. Be sure to give correct size and number of pattern.

2031—Dainty Dress for Mother's Girl. Cut in sizes 4, 6, 8, 10 and 12 years. Requires 4½ yards 36-inch material for 10-year size. In crepe, dotted Swiss, batiste, or soft lawn this is nice for a "best" dress. It may also be made up in gingham, chambray, repp, poplin or silk. The bertha may be omitted. The sleeve is nice in either length.

2030—Natty Suit for the Little Man. Cut in sizes 3, 4, 5 and 6 years. Requires 2½ yards 44-inch material for 3-year size. This style is

fine for wash materials, such as galatea, drill, linen, corduroy, seersucker, gingham and chambray. It is also good for serge, flannel and suitings of all kinds. The blouse may be worn in smock or sailor style. The shields may be omitted, also the yoke facing.

2022—Ladies' Practical Apron. Cut in sizes small, medium and large. Requires 4¾ yards of 36-inch material. Checked or striped gingham is nice for this model, also percale, sateen, lawn, drill and denim.

Most Attractive Dress—Waist, 2028, Skirt, 2027. Each pattern, 10c. Waist is cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Skirt in 22, 24, 26, 28, 30, 32 and 34 inches waist measure. This style is fine for morning wear, and if made up in the right material, fine enough for calling or afternoon wear. Note the cut of the waist with its inserted vest pockets and smart cuffs. And the new lines of the yoke, which overlaps a smart side plait on the skirt and may serve as a pocket.

Butter lost in skim-milk from one cow in one year when separator speed varies.

Reducing speed ten crank revolutions. Loss of Butter 7.28 lbs.

Reducing speed twenty crank revolutions. Loss of Butter 12.74 lbs.

Did *You* lose the Big Pile?

The above figures from the Purdue Experiment Station Bulletin No. 116 show butter loss by turning all separators (except Sharples) below speed stamped on the crank. And thousands of tests made by actual farmers show that 19 out of 20 persons *do* turn below speed most of the time. The total annual loss from this cause amounts to 80,000,000 lbs. of butter in the United States alone. This immense loss could be turned into pure profit by the universal use of the

SHARPLES
Famous Suction-Feed
"Skims clean at any Speed"
SEPARATOR

Because, the Sharples is the *only* separator that *varies* the feed in *direct proportion to the separating force.* Every other separator has a fixed feed; too much milk enters the bowl when turned below speed—some runs out into the skim-milk without separation, some gets into the cream making it thin and uneven. You don't need any nerve-wrecking speedometer with Sharples—you can turn as low as 35 turns per minute *and still get all the cream!* Sharples is

—the *only* separator that skims clean at widely-varying speeds
—the *only* separator that delivers cream of even thickness—all speeds
—the *only* separator you can turn faster and finish skimming quicker
—the *only* separator with just *one* piece in bowl—no discs, easiest to clean
—the *only* separator with knee-low supply tank and a once-a-month oiling system.

Over a million Sharples users in every dairying country of the world! Write today for catalog to Dept. 30.

The Sharples Separator Co.,
West Chester - - - Pa.
Sharples Milkers—used on over 300,000 cows daily
Branches: Chicago San Francisco Toronto
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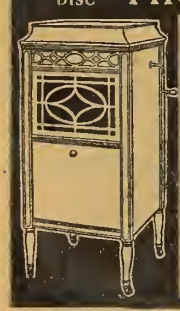
Genuine EDISON DIAMOND DISC PHONOGRAPHS



THEY RE-CREATE Music. Thos. A. Edison's great triumph. The world's master phonograph, latest model which is now offered to you at

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On easy terms. A little each week or month soon makes it all yours. Free catalogs of ALL styles mailed postpaid without obligation.
DAYNES-BEEBE MUSIC CO.
DEPT. E SALT LAKE CITY, UTAH

Elastic Stockings
KNEE CAPS, ANKLETS, SUPPORTERS, ETC.
Quick service, fresh goods, made to order on our own loom. Write today for measurement blanks.
The J. Durbin Surg. Supply Co.
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Kill All Flies! They Spread Disease
Placed anywhere, Daisy Fly Killer attracts and kills all flies. Neat, clean, ornamental, convenient, and cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Ask for

Daisy Fly Killer
Sold by dealers, or 6 sent by express, prepaid, $1.00.
HAROLD SOMERS, 150 DeKalb Ave., Brooklyn, N.Y.

LE PAGE'S CHINA CEMENT
STANDS HOT AND COLD WATER 10¢

Profitable Farm Poultry

W. E. VAPLON

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries Poultry Department, Western Farm Life, Denver, Colorado.

Winter Eggs Cost 18c Dozen

Did you pay war prices for eggs last inter? Most folks did, but while eighbors were paying from 35 to 40 ents a dozen for eggs, H. L. Kempter of the Missouri College of Agriulture was obtaining his for 18 cents. Ie had a small poultry plant in his ack yard. His chicken house, six eet square, was built for less than $4. The laying flock, consisting of ten White Leghorn pullets, was placed in he new house November 1. No male ird was included in the flock. No pace was available for a yard, but the onfinement, which is not advisable for reeding stock, did not seem to reduce gg production.

The ten hens produced 409 eggs from November 1 to March 31. Mr. Kempter considers this production good, ince only two of the hens were old nough to lay before January 1. Only 4 eggs were laid the first two months, while 365 were laid during January, February and March. Even then the 09 eggs were produced at a food cost f $7, or less than 18c a dozen. At market prices which averaged 35c a ozen, the eggs were worth $12.13. In ther words, the hens returned a profit f 50 cents a bird above cost of feed. During March the feed cost of a dozen eggs was less than nine cents a dozen. It is thus seen that the longer the hens re kept the lower the feed cost of a lozen eggs will be. By July 1, it will e not more than 13 cents a dozen for he whole period. The test has demontrated that laying hens can be kept on ny back yard, no matter how small, vithout becoming an objection to the eighbors, and that eggs can be economically produced.

The birds may be used for meat as oon as they become broody and cease aying. The market value usually increases until June, so that the initial investment with interest can be obtained at any time by selling the birds.

Why cannot more consumers become producers under Mr. Kempster's plan? In view of a more serious food shortage, the back-yard poultry lot would be even more profitable than it was last winter.

Chix Are Dying

I am having some difficulty with my young chicks and have decided to write you for whatever information you can give me. The chick begins to droop and will run along a few steps then tumble over or pitch forward, will lay on its side and pant, then repeat the performance until it becomes too weak to move and only lives about 24 hours. I have examined them for head lice and know they are free from them. I have a neighbor who lost about 1½ dozen in just a few days with the same trouble. I can find no indication of roup or chicken pox as described in the bulletin from the C. A. C. and have never had any such trouble before. If you can advise me in regards to it, I shall certainly be very glad.—Mrs. T. E., Plainview, Tex.

It is impossible to tell exactly what is the trouble with your chicks. Probably the only way to determine the trouble accurately would be to have a post-mortem examination. If you are living near enough to College Station, Tex., where your State Agricultural college is located, we would advise you to send one of your chicks immediately after it dies to the veterinary department of that institution. From your description I think it is entirely likely that your chicks have been eating spoiled grain or meat, or are poisoned from some other cause. Roup or chicken pox or any of the common poultry diseases would not affect them in the way you describe.

Brooder House Dimensions

Am very much interested in the brooder house illustrated in April number of Western Farm Life. Would like to have the plan of it, the height and how the lamps are attached. About how much will it cost to build it? I will do the work myself.—C. H., Nashville, Kan.

We do not have plans of the brooder house shown in Western Farm Life, but the dimensions are as follows: Seven feet long, 9 feet from front to rear, 7 feet high in the back, 3 feet high at the eaves. The brooder shown in the illustration is of the Cyphers type, the lamp being kept in a box attached to the outside, a lamp leading thru to the hover on the inside. However, we prefer the movable brooder, which is complete in one piece, the lamp being set into the center of the brooder.

In handling large number of chicks, the brooder stove, which may be heated with either coal or oil, and accommodating several hundred chicks, is more desirable.

At the time the building, shown in the illustration was made, material cost $13.50. At this time the material would probably cost 20 per cent more at our lumber yards. The material was of the best, 4-inch drop siding being used. I like the house very much for its convenience and cheapness of construction.

Judging Your Breeds

B. A. C., Torrington, Wyo., asks what are the points in judging White Plymouth Rock chickens. In all varieties, weight, size, shape and color are considered in judging. For every pound under the weight designated by the Standard of Perfection, two points are deducted from the possible score of 100. In some cases, cut is made for overweight above a certain amount. In considering shape, each section of the fowl is taken into consideration; the head and its different parts, including comb, ear lobes, wattles, etc., and then neck, back, breast, tail, wings and every section of the body down to the toes. It is the shape which makes the breed; no matter how good the specimen is in color, it should by all means have the characteristic shape of the breed to entitle it to a place in the winning. In considering color, again every section is taken in consideration, the head, points as mentioned above, and every section of the body. I would suggest that those interested in the standard requirements of their particular breed or variety, either get a Standard of Perfection, which can be purchased of any poultry journal and could cost $2, or better yet write to the Reliable Poultry company, Quincy, Ill., for their books on the various breeds. These books cost about 50 cents each and take up but the one breed.

Substitute For Clabber

Is there anything that will take the place of clabber or cottage cheese for young turkeys? I want to raise some turkeys, but do not have the milk to make cheese for them. How can I get rid of lice on horses and cattle?—Mrs. M. H., Colorado Springs, Colo.

We are referring your letter to the veterinary department of the college, and I am sure Dr. Glover can give you instruction as to how to free the horses of lice. As to a substitute for clabber or cottage cheese, any form of meat food will answer, except that we sometimes think that sour milk and buttermilk have a medicinal as well as a food value. Generally, milk is fed to take the place of meat food when it is hard to procure. Very likely your feed houses will be able to furnish you with prepared beef scrap and possibly your markets have fresh cut bone to sell. Just as soon as bugs and worms appear, your turkeys will be able to pick up all the animal food they need.

The Implement Blue Book Free—The Midland Publishing Co., St. Louis, Mo., has left over a few copies of the 1916 Implement Blue Book, one of which it offers to mail free of charge to any subscriber of this paper who will send 25 cents to pay the packing, postage, etc. The book has nearly 500 royal octavo pages and contains complete classified descriptive lists of all farming implements, tractors, tractor plows, vehicles, wagons, and kindred goods made in the United States, with names and addresses of manufacturers.

PULLFORD TRACTOR, $135
F. O. B. Factory

Pullford pulling two 14-in. plows. The "Pullford" does the work of four big horses on high gear, attached to practically any make of car in 30 minutes; removed in less time. The "Pullford" will do all your farming, such as plowing, harrowing, seeding, harvesting, etc. Will also do your heavy hauling. No farm should be without one. Live agents wanted in every county in Colorado, Wyoming, New Mexico, Texas, Oklahoma.

THE HEADINGTON AUTO CO.
Distributors
1636 Broadway, Denver, Colorado
Branch Office, 1909 Commerce Street
Dallas, Texas

Drilling Wells is a Year Round Business

Drilling Water Wells is a profitable, healthful year-round business. There are wells all around you to be drilled. Don't you want to get into a money-making business for yourself? Write for particulars. Star Drilling Machine Co. 669 Washington St., Akron, Ohio

OVERLAND GIVEN

Don't buy an auto. If you live in the country or town under 10,000, you can get this new, 1917 OVERLAND without cost, as a reward for a few weeks' spare time work in your own community. Many machines already given away. Write today for my easy plan.
H. D. BRATTER, Mgr.
Dept. P OMAHA, NEB.

GET MY PRICES

I can ship at once any size or style WITTE High-Grade Engine—2 to 22 H-P.—Kerosene or Gasoline—Stationary, Portable or Saw-Rig—ready to run—Guaranteed 5 Years. You don't have to wait 6 to 8 weeks for a WITTE. You save $25 to $100. Choice of engines—Cash or Easy Payments. My Free Book "How To Judge Engines," by return mail.—Ed. H. Witte, Pres.

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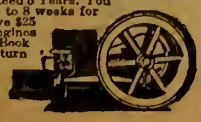
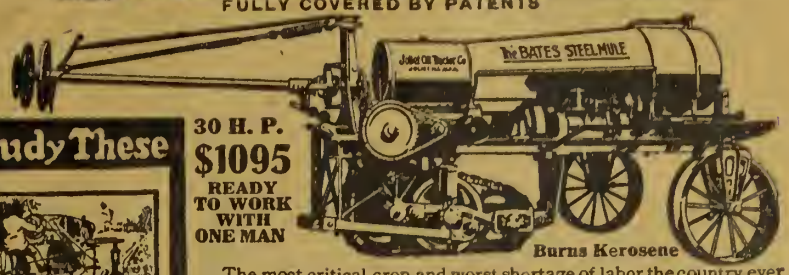


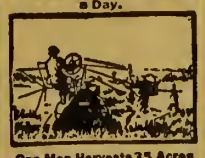
One Man Does The Work Of Three Men With The Bates Steel Mule

FULLY COVERED BY PATENTS



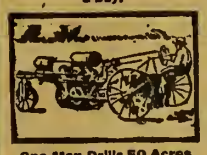
Study These

One Man Plows 10 Acres a Day.



One Man Harvests 35 Acres a Day.

One Man Discs 30 Acres a Day.



One Man Drills 50 Acres a Day.

One Man Cultivates 30 Acres a Day.

30 H. P.
$1095
READY TO WORK WITH ONE MAN

Burns Kerosene

The most critical crop and worst shortage of labor the country ever faced is upon us. "Raise Bigger Crops" is the cry. Machines must take the place of men—tractors that not only *do more—pull more—save more* are more necessary than ever.

The BATES STEEL MULE and one man will do more work every day than twelve horses and three men. It has double the working capacity of most tractors, because one man can do everything with it from plowing to harvesting and do it quickly, surely and well. And over 4,000 farmers have proved it.

Avoid Disappointment; Reserve Yours Now

Bates Crawler

Because it takes less labor to run it than most tractors (one man operating both tractor and implement) naturally the demand for "MULES" is tremendous. For this Spring's work our big six-acre plant running to capacity night and day could not begin to fill the orders offered it. It was necessary to refuse three orders for every one accepted.

Now is the time to prepare for Summer or Fall. Be foresighted. Fortify yourself against labor shortage by reserving your MULE today. Reserve it now and ship later if you wish, *but now is the time to act.* Three months from now you will be willing to give twice its value for a "MULE" and not be able to get it.

The Crawler is one of the parts which makes the MULE the most powerful three plow tractor in the world. The Crawler saves a lot of time because it does not have any "back slip"—does not pack the ground, and works on any soil, wet or dry the year around.

Write today for facts and figures of what the BATES STEEL MULE will do for you.

THE JOLIET OIL TRACTOR CO.
211 Benton Street Joliet, Ill.

Western Tractor & Implement Co.
Denver, Colo., Distributors

The Farmers Life Insurance Company
Home Office, 340 Gas & Electric Building,
DENVER, COLORADO

Admitted assets	$ 2,288,644.00
Insurance in force	16,689,093.00
Capital stock and surplus	381,041.00

DO BUSINESS WITH A HOME CONCERN AND KEEP YOUR MONEY IN THE WEST

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Dr. J. E. Kinney	Medical Director

How Does Your Harness Look?

Is the leather dry and cracked? Is the surface dull and dingy? Use

EUREKA Harness Oil

Keeps good harness good. Makes old harness look like new and wear longer. Preserves the leather and prevents checking. No acid, lamp black, or fat.

Sold in 1 pint to five gallon tins, barrels and half-barrels.

THE CONTINENTAL OIL COMPANY
(A Colorado Corporation)
Denver Pueblo Salt Lake City Cheyenne
Butte Albuquerque Boise

Stack Your Hay The Easiest Way—The "Jayhawk"

Livestock

War prices are being paid at all markets for all classes of livestock. Recent records include $20.25 for fat lambs on the Chicago market; $17.60 on the Denver market for a bunch of 137 lambs marketed by Paul Eaton of Eaton, Colo. Cattle have been straining the roof around $14 for fat steers at Chicago, and in the neighborhood of $12 locally. Hogs are still hitting around $16, with no prospect of anything but a continuation of abnormal figures for some time to come.

$2,932.10 For Carload of Hogs

Porter & Higgins of Haigler, Neb., were on today's market with a shipment of hogs that sold at $15.65, bringing the total gross price of $2,932.10, which is some price for a carload of hogs. Sam Porter accompanied the shipment and was well pleased with the sale. Mr. Porter has been shipping hogs to the Denver market for more than thirty years.—Record-Stockman.

Colorado Lambs $18

Colorado lambs crossed the $18 line early this week, selling at $18.15, and the $13.50 quotation on cattle was restored. The appreciation on sheep and lambs has been continuous and irresistible and both choice and common cattle are selling at the highest prices of the year. Middle grades of steers and butcher cattle have encountered vicissitude, but the market has a healthy undertone and reacts promptly on every light run. Hog values have slipped, owing to partial elimination of eastern demand which has repressed speculative energy, but on all breaks demand reasserts itself. Liquidation due to the steady advance in feed cost, coupled with acute scarcity of corn in many localities, is still in evidence and is responsible for unloading thousands of immature cattle and light hogs.—Breeders' Gazette.

Hon. E. L. Montgomery of Longmont, Colo., was on the Denver market recently with a shipment of three carloads of steers. One bunch of 23 head averaged 1,111 pounds, and sold to packers at $11.90, which is as high as any steers ever sold on this market. One load of 21 head sold at $11.60, and the other carload of 22 head weighed 1,107 pounds and sold at $11.30. Nels Martin of Johnstown, Colo., had in three carloads of choice steers also, one car of which weighed 1,172 pounds and sold at $11.90. He also marketed a carload of 1,163-pound steers at $11.50, and 21 steers, average 1,040 pounds, at $11.15.

The death of Count Majesty 113195, the famous herd bull belonging to A. M. McClenahan of Greeley, Colo., is a serious loss to the Jersey interests of the Rocky mountain region. Death was due to pneumonia. Count Majesty, fortunately, leaves progeny of both sexes that have the desirable characteristics of this great sire.

Galloway Breeders Organize

On Monday evening, May 14th, a goodly number of the breeders of Galloway cattle in Nebraska met at Lincoln and perfected a state organization. A number of talks were given at this meeting by prominent breeders of Galloway cattle. Col. F. M. Woods, the dean of auctioneers, related in a very interesting manner his first experience with the Galloway cattle forty years ago.

It was decided to encourage the Galloway exhibit at the State Fair by the members present, each fitting a few animals. The matter of a state association sale was also discussed.

Secretary Brown of the Galloway association gave the men many valuable pointers.

The following officers were elected: Mr. V. W. Straub, Avoca, president; Mr. O. C. Murphy, Oconto, vice-president; Mr. W. W. Dunham, Doniphan, secretary, and Mr. Lamb, Williams, treasurer.

It was decided to hold the annual election of officers and the annual program at the time of the mid-winter meetings at the University Farm at Lincoln, this being during the third week in January.

Feeding a Family of Ten on Sixty Dollars a Month

(Continued from page 4)

must have a certain amount of acid in our food. I find the dried fruits cheaper than the canned, and the best or at least the medium qualities, cheaper than the poorest. The great mistake that many make in cooking dried fruits is in not having enough water with the fruit. Dried fruits have a rather strong flavor, and this is reduced by using more water.

Now, just one more suggestion in the matter of variety. One of my boys had occasion last week to eat a hurried lunch (store lunch). He said that he went to a bakery and bought cinnamon rolls and cake. "The more I ate the hungrier I got, so I bought a milk-stir and was still hungry!" I explained to him that if he had spent half the amount at a fruit store he would have been more than satisfied. It isn't the amount that we eat, but what we eat that counts. I have learned to make salads of odds and ends, when no other acid food was available, and to even put a few drops of vinegar into meat stews and pot roasts.

All this about cooking and so little about buying and paying the price! Well, this is the way I do it. If in the near country, I take my weekly allowance, if in the far-country, my monthly stipend, and play a little game with pencil and paper. I make several headings, as meat, groceries, rent, light, etc. Then I fill in the things that I know must absolutely be bought and paid for, and subtract the amount from the original sum. Also knowing how much flour I use per month, how much sugar, meat and so on, I write these down and subtract. That is, I first take out what we will call the running expenses, then the absolute necessities and divide up the rest as best I can, keeping in mind all the needs of the human system and a few of its desires. Then I do my buying. Where I can, that is, where it is practicable, I buy in large quantities, as it saves both money and time, and where I can't, I buy for the present need and lay aside the money allotted for the future need. The discouraging part of this is that I must stick to my plan or I find myself in deep water, but the joy of it is in knowing that one is "getting by."

Now I hear you say: "Well, she has told us everything except the very thing we wish to know—that is, how she makes sixty dollars feed ten for a month. Why doesn't she give us a list of the things she buys and what she pays for them?"

Patience, kind friends, I was just coming to that when the grocer's wagon came and I had to go to the kitchen to check in the supplies. I don't want the editor to refuse this contribution on account of the lack of a few dry statistics. The schedule given below is on the basis of prices prevailing the week of March 14th to 21st inclusive. Since the editor insists on my being absolutely truthful I will admit the ownership of six Plymouth Rock hens. These six hens will average five eggs a day. (The family insist that the neighbor's hens visit us during the laying period, but we can't prove it.) As we feed these hens exclusively on scraps the eggs are clear gain.

Also I have a cow, but I am listing cost of butter, because the cost of feed balances it. I have all the milk needed, which represents profit on the cow.

Now here is the sample month (sometimes it runs a little over $60, sometimes a little less):

Flour	$11.25
Sugar	3.75
Meat, salt and fresh	15.00
Groceries, including fresh and dried fruits	20.00
Butter	8.40
Eggs	.90
Coffee, tea, extracts, etc.	2.00
	$61.30

Blood Poisoning

I have a fine mare that got a nail in her foot last August and her leg swelled up about three times its natural size and I have lately opened the leg at the ankle and there was a good deal of matter came from it, but it does not heal up or the swelling doesn't go down and the leg is most as hard as a bone. I have been unable to get anything that would help it.—J. L. H., Garfield Co., Colo.

This is evidently a case of septic infection (blood poisoning) and is best treated with bacterins. Apply hot poultices of flaxseed meal, bran or antiphlogistine. Secure drainage from the bottom of the foot if possible. Relieve pus that accumulates near the surface of the leg. Feed grain. Call a veterinarian.—G. H. Glover.

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Their superiority is due to nearly 20 years of specializing in "Vaccines and Serums only."
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Write for new booklet, "The Control of Blackleg." It tells about Anti-Blackleg Serum which cures Blackleg and may be used simultaneously with vaccine to combat outbreaks and safely protect valuable stock.
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Bred by the Agricultural College. Most of the dams in the advanced registry.
Animal Husbandry Department
COLORADO AGRICULTURAL COLLEGE
Fort Collins, Colorado

Count Majesty Is Dead
But I have two or three of his sons out of splendid cows that are excellent prospects for herd-headers; better secure one of them before they are gone. His sons are good—his heifers the finest prospects I ever saw. Majesty Oxford Combination now at head of herd.
In Durocs, have a litter of (13) out of daughter of Critic B 2nd, by a sow of Grand Model, that are good.
A. M. McCLENAHAN Greeley, Colorado

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Livestock insurance is just as necessary, shows just as good business judgment as fire insurance or life insurance. A policy will safeguard your interests, it will enable you to secure the largest loan possible on your livestock in case you should find yourself in need of additional funds. We write a blanket policy and also a special policy on registered stock. Send for free specimen policy and full particulars about our insurance.
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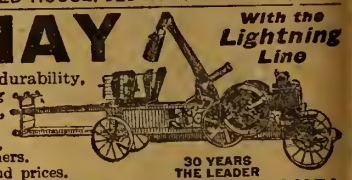
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I have the largest 6-year-old jack west of the Missouri River for sale. Other bargains in Mammoth jacks and jennets.
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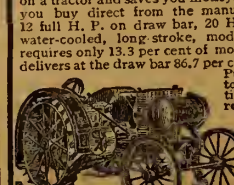
Has everything you want and demand on a tractor and saves you money, because you buy direct from the manufacturer. 12 full H. P. on draw bar, 20 H. P. on belt, four-cylinder water-cooled, long-stroke, modern motor. By actual test requires only 13.3 per cent of motor's power to propel itself delivers at the draw bar 86.7 per cent of the motor's efficiency. Pulls easily three 14-in. bottoms 8 to 9 in. deep in clover or timothy sod. Unexcelled for road building. Will do any portable engine job.

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VANTED—HEAR FROM OWNER GOOD FARM for sale. Cash price; description. D. F. Bush, Minneapolis, Minn.

INE STOCK RANCH. ALSO IRRIGATED farms. Southeastern Colorado. C. L. Seeley, a Junta, Colo.

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STOCK RANCH, $1,900; IMPROVED; 200 acres; deep soil; timber; high schools; dry farming or irrigation. E. Hopkins, Nucla, Montrose county, Colo.

HAVE SOME CASH BUYERS FOR SALABLE farms. Will deal with owners only. Give full description, location and cash price. James P. White, New Franklin, Mo.

240 ACRES, WELL IMPROVED, 4½ MILES of county seat of Fulton County, Arkansas, to exchange for income property or farm in the West. Also other exchanges. Oaks-Realty Company, West Plains, Mo.

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I HAVE 160 ACRES FOR SALE, FINE, TILlable land, fine soil; all fenced and cross fenced; some alfalfa, stone barn, small house, corralls, reservoir, artesian wells. Price $2,400; part on time. G. Crill, Blaine, Colo.

IMPROVED QUARTER SECTION IN KIOWA Valley. Windmill, silo, 4-room house, barns, 40 acres broken, 10 acres alfalfa, $35.00 per acre. $2,000 cash, balance easy terms, 6%. Reynolds, Covey & Reynolds, 205 McPhee Bldg., Denver.

SOUTH CENTRAL TEXAS. MATAGORDA County, the rain belt, sure-crop county. No droughts. Can show now fine growing crops cotton, corn, luxuriant pastures. For land bargains address Magill Bros., Bay City, Texas. Live agents wanted.

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JUST RETURNED FROM SOUTH AMERICA—Arranged for million-acre grant; organizing cattle company. Want members join organization who are given 2,000 acres and stock in company for less than five cents an acre. Want sixty to seventy members to go to work on ranch. Highest reference. Box Q., Sawtelle, Calif.

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MONTANA HOMESTEADS—16,000,000 ACRES. 640 acres or 320 acres for you; circulars free. Homestead Bureau of Montana, Dept. 87, Box 848, Butte, Mont.

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BARRED ROCK EGGS 100 $4.00. MRS. Alex Sheridan, Kanopolis, Kans.

CHOICE WHITE ROCK EGGS, $1.00 PER 15; $6.00 per 50; $5.00 per 100. Mrs. Anna Plotts, Geneva, Neb.

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ROSE COMB REDS—EGGS $5.00-100. CATHerine Recker, Dresden, Kan.

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ROSE COMB BREEDING STOCK FOR SALE. Prize winning, heavy laying strain. Write your wants. E. A. Miller, Alma, Nebr.

CLASSY ROSE COMB REDS—EGGS, $1.50 TO $3.00. Baby chix, 15c each, $12.50 per 100. Mrs. Chas. Hill, Toronto, Kans.

EGGS? YES—SINGLE-COMB RED EGGS. Winning and paying stock; mating list. C. Bonsall, Box C, Fairbury, Neb.

BIG MISSOURI RHODE ISLAND REDS, ROSE comb, 15 eggs, $2.25 from pen No. 1. Special pen, 15 for $5.00, prepaid and guaranteed. J. C. Guyer, Mandon, N. Dak.

HALL'S S. C. REDS AND WHITE ROCKS WIN again at the Great Denver Stock Show. Eggs, $1.50 per setting up. Mating list free. Stock for sale. Liston L. Hall, Gering, Neb.

SINGLE COMB RHODE ISLAND RED HATCHing eggs from deep, brilliant Red. Long back and low tail; $2.50 for 15 eggs and $1.50 per setting or $6.00 per 100 eggs. Mating list free. Nels W. Peterson, Mason City, Neb.

BRED-TO-LAY S. C. REDS—FINE, LARGE, hardy, hen-hatched, free range, heaviest winter layers; eggs, $1.00 setting; $2.50 fifty and $4.50 hundred, guaranteed. Belmont Farm, Topeka, Kans.

SIX GRAND PENS ROSE COMB REDS, MATED to roosters costing $15.00 to $50.00; 15 eggs, $2.50; 30 eggs, $4.00; 50 eggs, $6.00. Pure bred range flock, $5.00 per 100. Baby chicks. Send for catalog. W. R. Huston, Americus, Kans.

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BUFF ORPINGTON EGGS, $5.00 PER 100. Mrs. Alma George, Denton, Neb.

PRIZE-WINNING SINGLE COMB BUFF ORPingtons; eggs, $1.25, 15; express prepaid. Carl Scherbacher, Guide Rock, Neb.

WHITE ORPINGTON EGGS FROM LARGE scored birds; $6.00 per 100, $1.50 setting. Otto Hampp, Beaver Crossing, Neb.

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EGGS—$1.00, $2.00 AND $3.00 PER 15 THE rest of the season. F. M. Shank, La Junta, Colo., State Vice-President National S. C. Buff Orpington Club.

SINGLE COMB BUFF ORPINGTON EGGS, $1.50 for 15; 8-pound hens, 13-pound cockerels; the kind that lays—the kind to sell. H. M. Wilkinson, Ansley, Neb.

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GOLDEN WYANDOTTES—WINNERS IN THE best shows; 200-egg strain; $1.50-$3.00 per setting; $8.00 hundred. Highland Poultry Farm, Fairbury, Neb.

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MAMMOTH LIGHT BRAHMAS; EGGS, $1.00 per 15. A. M. Richardson, Altoona, Kans.

PURE-BRED MAMMOTH LIGHT BRAHMAS; 15 eggs, $1.00. Cora Lilly, Olivet, Kans.

EGGS—PURE-BRED LIGHT BRAHMAS; 15, $1.00; 50, $3.00; 100, $5.00. Mrs. Grace Buskirk, Pender, Neb.

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QUALITY DARK CORNISH, THE IDEAL FARM fowl. W. W. Officer, Fowler, Colo.

QUALITY DARK CORNISH. R. H. JANDEBEUR, Alma, Nebr.

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SINGLE COMB BLACK MINORCAS. EGGS $5.00 hundred. Claude Hamilton, Garnett, Kan.

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GET MY FREE MATING LIST OF CHICAGO and Madison Square prize winning Langshans. John Lovette, Mullinville, Kan.

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WHITE-FACED BLACK SPANISH FROM THE best stock to be obtained in this country. Have sold out on stock, but can furnish eggs, $2.00 per setting, $10.00 per 100. W. W. Yale, Chickasha, Okla.

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ROYAL BLUE STRAIN RAUEN DUCKS, $1.75 each. Eggs in season. Jas. Cassell, Fremont, Neb.

RUNNER DUCKS AND POLISH EGGS, $1.00 setting. Undefeated; best. Ora Dubbs, Douglas, Kans.

FAWN WHITE RUNNERS; ELEVEN, 75c, POSTpaid in Colorado; 100, $4.00. Mrs. Baker, Arvada, Colo., Route 1.

BABY CHIX

50,000 PURE-BRED BABY CHICKS TO SELL, 10 cents each. Wanted, good, pure-bred eggs, premium above market price. Colwell Hatchery, Smith Center, Kans.

SEVERAL VARIETIES

DARK CORNISH AND WHITE ORPINGTON $1.75 per 15, $3.00 per 30. Mrs. Brockey, R. R. No. 1, Peru, Kansas.

COLUMBIA HATCHERY—ALL LEADING VArieties of baby chicks, cockerels and hatching eggs. Reds, Rocks, Leghorns, Orpingtons, etc. Live delivery of baby chix guaranteed to your express office. We ship to all parts of Colorado, Wyoming, New Mexico. Write for price list. P. O. Box 1102, Denver.

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YOU CAN MAKE A GOOD LIVING IN YOUR back yard raising rabbits for us. We will pay you from $1.00 to $2.00 each for youngsters. Breeders furnished at reasonable prices. Send dime for contracts and circulars. Thorson Rabbit Company, Aurora, Colo.

LIVE STOCK

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CATTLE

MILKING SHORTHORNS AND JERSEYS FOR sale. W. A. Wight, Las Animas, Colo.

FOR SALE—DOUBLE STANDARD POLLED and Horned Hereford bulls. Wallace Libbey, Maxwell, N. M.

HOLSTEIN CALVES—TWELVE HEIFERS AND two bulls, 15-16th pure, four to six weeks old, $18 each, crated for shipment anywhere. Fernwood Farm, Wauwatosa, Wis.

FOR SALE—REGISTERED JERSEY HERD OF the St. Lambert and Hood Farm breeding. Largest in size and production. Will sell bull calves very cheap. Excelsior Dairy, O. S. Larson, Prop., Fort Morgan, Colo.

HEREFORDS—15 YEARLING BULLS AND about 30 bull calves, all registered, and of the best breeding and individuality. Among the yearlings are three herd headers, also one 4-year-old bull by Simoon. All at popular prices in order to sell. J. O. D. Ranch, Aroya, Colo.

REGISTERED JERSEYS AND MILKING SHORThorns. Jersey herd headed by Maggie's Shy Duke, 140084, Grand Champion Denver Stock Show. Two nearest dams average 54 lbs. milk per day. Shorthorns headed by Independence Lee 427351. Two grandams average 9023 lbs. milk in one year. The Hinman Silo Co., 1650 Champa st., Denver.

HOGS

REGISTERED, BIG TYPE DUROC JERSEY hogs for sale. Edgemoor Farm, Littleton, Colo. Caldwell Martin, Owner.

REGISTERED DUROC JERSEY BOARS AND gilts, sell at $15 and up according to age and quality. We are sold out on bred gilts, but can contract for gilts to be bred for later farrowing. Our sales at the Denver yards speak for the quality. J.O.D. Ranch, Aroya, Colo.

DUROC JERSEYS FOR SALE—PURE BRED registered Duroc Jersey boar and eight sows. 19 head brood sows, not registered. Priced for quick sale. Let me know your wants. Address H. D. Rockefeller, Lock Box 21, Kremmling, Colo.

JACKS AND MULES

KIT CARSON, A BIG-BONED 7-YEAR-OLD jack, winner at Denver show, $500. Also a great yearling jack, promises to be bigger and better than his sire, and out of a jennet who took first at Denver also; price, $250. We have some excellent mules for sale; all ages and sizes. J. O. D. Ranch, Aroya, Colo.

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Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

FARMERS WANTED—$75 A MONTH, MEN AND women. U. S. Government jobs. War means hundreds vacancies. Common sense education sufficient. Write immediately for free list positions now obtainable. Franklin Institute, Dept. C, 177, Rochester, N. Y.

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MAKE YOUR POULTRY BEAT THE HIGH cost of feed. Write for free treatise telling how. E. Grosser, 30 years' experience with poultry in the West, 2240 Perry, Denver.

FARMERS AND STOCKMEN, IF TROUBLED with Loco Weed, you can kill it with our Loco Killer without chopping or digging. Also want men to handle territory. If interested, write Western Mfg. & Trading Co., Box 673, Denver, Colo., Successors to Weisenborn & Huck.

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FREE FOR SIX MONTHS—MY SPECIAL OFfer to introduce my magazine, "Investing for Profit." It is worth $10 a copy to anyone who has not acquired sufficient money to provide necessities and comforts for self and loved ones. It shows how to become richer quickly and honestly. Investing for Profit is the only progressive financial journal and has the largest circulation in America. It shows how $100 grows to $2,200; write now and I'll send it six months free. H. L. Barber, 449-20 Jackson Blvd., Chicago.

IF YOU DON'T FIND ADVERTISED HERE what you want, write our classified advertising department and they will be glad to place you in correspondence with the right parties.

NOBLE REX, 5-YEAR-OLD REGISTERED SADdle-bred stallion, 16 hands, black, 1,200 lbs. Grand individual, goes all five gaits; winner of stallion class at 1917 Denver Stock Show. By a son of the immortal Rex McDonald. J. O. D. Ranch, Aroya, Colo.

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MAIL US YOUR KODAK FILMS; ROLL FILMS developed, 10c. Printing, 3c and up. One-day service. No delays. Established 1905. The Mile High Photo Co., 322 17th St., Denver, Colo. Authorized agents Eastman Kodak Co.

KODAKS, CAMERAS, PHOTO SUPPLIES—Fords, the best kodak store, 1029 16th St., opp. old P. O., Denver, Colo., for Eastman Kodaks, all makes cameras, films, photo supplies; develop any size roll films, 10c; print pictures, 3c each and up; mail orders solicited; kodak and camera catalogue mailed free upon request. Mention this paper.

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June 11 to 16

THE best time of the year to safeguard your casings for the coming season. You can't afford to chance ruining perfectly good casings with worn-out tubes.

Forestall inconvenience. The hot Summer months are coming when tubes are subjected to their greatest strain. See to it NOW that your tube equipment is right and ready to meet all the conditions of Summer driving. Replace all your old tubes NOW—before Fisk Week goes by.

Fisk Tubes have been of laminated construction ever since they were first built—that is, built up layer upon layer of pure rubber.

New Fisk Tubes bought NOW will give you better tire satisfaction and lower up-keep costs for the balance of the season.

THE FISK RUBBER COMPANY
of N. Y.
General Offices: Chicopee Falls, Mass.

Fisk Branches in Denver, Salt Lake City, Billings, Butte, Great Falls, Rapid City, Hastings, Lincoln and Omaha.
Fisk Dealers Everywhere (7)

If you do not find a Fisk Branch in the partial list above that is convenient to where you live, write for complete list—there may be one nearer you.

Fisk Gold Bond Tubes are RED—there is no higher tube quality anywhere

Fisk Pure Fine Para Tubes are GREY—the most popular tube in the country

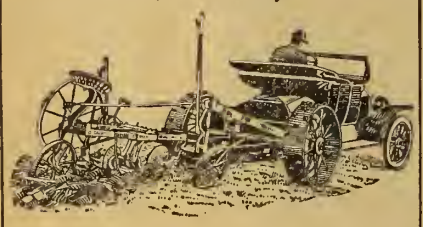
Western Farm Life

Vol. XIX Denver, Colorado, June 15, 1917 Semi-Monthly

Corn Planting In the Kiowa Valley

Brock-Hollinger Press Co.

PULLFORD TRACTOR, $135
F. O. B. Factory



Pullford pulling two 14-in. plows. The "Pullford" does the work of four big horses on high gear, attached to practically any make of car in 30 minutes; removed in less time. The "Pullford" will do all your farming, such as plowing, harrowing, seeding, harvesting, etc. Will also do your heavy bauling. No farm should be without one. Live agents wanted in every county in Colorado, Wyoming, New Mexico, Texas, Oklaboma.

THE HEADINGTON AUTO CO.
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Get the Plan Book—
that shows this and 59 other prize designs of **American Ready Cut Homes**—floor plans, prices, etc.
We furnish clear, knotless Douglas fir lumber, and because we are the oldest and largest ready cut company in the West and the West is the world's greatest lumber market, we can ship you a better home for less money, all cut to fit, ready to erect. The ready cut way is the modern way. Send for Free Plan Book of "American Homes" now!
Ready Built House Company
31 Ship Street Portland, Oregon

Contagious Abortion

DR. GEO. H. GLOVER

A subscriber at Durango states tha he understands that carbolic acid fe to cows with salt will prevent abo tion. Carbolic acid, methylene blu and various biologics have constitute the main treatment for contagiou abortion, but we must admit that non of these things have solved the pro lem. I have before me a pamphle published by the U. S. Department o Agriculture, which contains the follow ing statement: "It should be unde stood that no effective cure for the di ease (contagious abortion) has ye been found. Do not depend on drug and proprietary medicines." We ar unable at the present time to cope wit this disease successfully, but we d know that it is contagious and w know the general principles that ar applied to the control of contagiou diseases. The following summar taken from a recent publication of th U. S. Department of Agriculture, i apropos:

Disinfecting the Bull

To prevent the bull from carrying the infec tion from a diseased cow to a healthy one, first clip the tuft of long hair from the opening of the sheath, then disinfect the penis and sheath with a solution of one-half per cent of cresol compound, lysol, or 1 per cent carbolic acid (see note A), or 1 to 1,000 potassium permanganate in warm water. The only apparatus necessary is a soft rubber tube ⅝-inch in diameter and 5 feet long, with a large funnel attached to one end; or an ordinary fountain syringe and tube would serve the purpose. The tube should be inserted into the sheath and the foreskin held with the hand to prevent the immediate escape of the fluid. Elevate the funnel as high as possible, and pour in the fluid until the preputial sac is filled. In addition to this, the hair of the belly and inner sides of the thighs should be sponged with an antiseptic of twice the strength of the irrigating solution. This disinfection should invariably precede and follow every service.

Treatment of the Cow

Isolate the aborting cow. The germs of the disease are contained in the discharge, and in the dead fetus and its membranes. Gather these up and bury or burn them and disinfect the stall thoroughly. Don't neglect this cow. By thoro treatment you can restore her to usefulness and prevent sterility.

More than half the cows abort but once, so don't sell your cow because she aborts.

The uterus should be irrigated daily with one of the antiseptics mentioned for the bull, using the same apparatus, and irrigation should be continued until discharge ceases. If large numbers of animals are to be treated, a bucket can be fitted with a small faucet to which the tube is attached. This can be suspended from the ceiling, or from the rail of the litter carrier. Lugol's solution, in a strength of 2 per cent (see note B) has been found to be desirable as a uterine douche. It is not permitted to remain in the uterus, but is flushed out with salt solution. (See note C).

The action of the antiseptic should be noted, and if it causes straining or irritates the tender membranes of the genital organs, a less irritating solution should be used. In addition, the external genitals, root of tail, escutcheon, etc., should be sponged daily with a solution twice as strong as that used for irrigation, and this latter treatment should be given the nonaborters as well. Should the preliminary symptoms of abortion be detected, the animal should be removed from the herd and treated as above.

Note A.—Two tablespoonfuls of fluid equal 1 ounce, therefore, this amount of antiseptic added to 6 pints of boiled water will make approximately a 1 per cent solution.

Note B.—Lugol's solution of iodin is compounded as follows: Iodin 5 parts, potassium iodid 10 parts, and boiled water to make 100 parts. Two parts of this compound in 100 parts of boiled water make a solution suitable for uterine irrigation. Lugol's solution can be purchased from your druggist.

Note C.—A 1 per cent solution of common salt in boiled water at body temperature makes a suitable irrigating fluid. A heaping tablespoonful of dry salt weighs approximately 1 ounce, and this amount in 1 gallon of boiled water gives the proper strength.

Retention of Afterbirth

The retention of the afterbirth is a serious matter. It should not be forcibly removed, as the lining membranes of the uterus would be torn and a point of entry thus provided for the germs which cause blood poisoning. The uterus is very susceptible to this form of infection at such times, and injury should be carefully avoided. Clumsy and forceful manipulation of the parts may cause infection and death of the animal. The best practice is to flush the uterus twice daily with a mild antiseptic to prevent the accumulation and absorption of poisonous product and allow the membranes to come away themselves. In all these manipulations, hands and utensils should first be thoroughly disinfected. In fact so much special knowledge and operative skill is required that a competent veterinarian should be employed to instruct the owner before these operations are undertaken.

After abortion, breeding should not again be attempted within two months, or until the discharge shall have ceased, as the uterus would not be normal and the animal either would not conceive or would abort again in a short time.

Sterility, weakling calves, retained afterbirth, white scours, and calf pneumonia frequently accompany abortion. The measures recommended will also assist in overcoming these complications.

Practical Farming.—Only a few copies of this book left. If you have not already received one of these books for inspection, fill out the card we sent you or write us at once. Address circulation department, Western Farm Life, Denver, Colo.

FEDERAL DOUBLE CABLE BASE TIRES

If you've never used Federal Tires try them now. Without an equal for country roads. The non-skid treads are tough and durable, give perfect traction and hold the car safely to the road in wet or slippery weather.

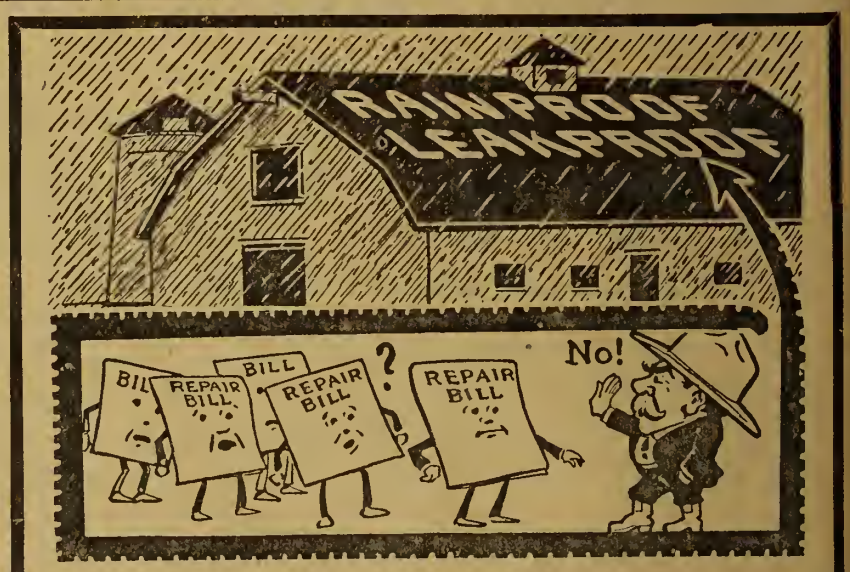
No matter how hard or rough the going, Federal Tires always hold fast. For down in the base of the tire four strong steel cables anchor the tire safely to the rim against the hardest kind of strains. Yet they slip off easily when necessary.

Made in white Rugged and black Traffik non-skid treads. Sold by leading dealers everywhere.

The Federal Rubber Company of Illinois
Factories: Cudahy, Wis.

(3)

Manufacturers of Federal Automobile Tires, Tubes and Sundries; Motorcycle, Bicycle and Carriage Tires; Rubber Heels, Fibre Soles, Horse Shoe Pads, Rubber Matting and Mechanical Rubber Goods.



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He Used
BITUMINOUS WATERPROOF ROOF PAINT

on the shingle roof of his house and all farm buildings. He made these all leakproof—so no repairs will be necessary. Bituminous preserves the wood, prevents decay and dry rot **AND SAVES THE BIG BILL FOR REPAIRING.**

Spray your chicken houses with **Crown Carbolic Oil**—the Real Disinfectant. **Dandelion Doom** will save your lawn. It destroys the dandelion completely.

CROWN TAR WORKS
Denver, Colorado
OPERATED BY THE DENVER GAS AND ELECTRIC LIGHT COMPANY

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The seams and pores in an axle can only be seen with a magnifying glass but they cause friction. Use

MICA Axle Grease

on your axle and prevent friction. It is made of the finest grease stock and powdered mica. It fills the pores and gives the axle a bright, hard coating. Does not gum or stick.

THE CONTINENTAL OIL COMPANY
(A Colorado Corporation)
Denver Pueblo Salt Lake City Cheyenne
Butte Albuquerque Boise

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WESTERN FARM LIFE

A Western Magazine for Western Farmers and Stockmen

Comprising Ranch and Range, Farmers Life and Fruit Journal, Trans-Mo. Farmer and Ranchman

Largest Circulation of Any Farm Magazine in the West

Volume XIX | DENVER, COLORADO, JUNE 15, 1917 | Number 12

Ray L. Beitler, a Newcomer in the Kiowa Valley, Breaking Sod for This Year's Crops

Increasing the Acreage of Food Crops

A DAY SPENT WITH THE FARMERS OF THE KIOWA VALLEY

ALVIN T. STEINEL

WHEN the crop figures are totaled up next fall it will be found that Colorado has responded well to the world's call for food. Whether the same may be said of the demand for feed crops to carry livestock thru next winter, or to finish it for market, it is not so certain. There is every indication that the effort to increase the yield of food for human use has been successful somewhat at the expense of the stock industry. There is, however, still time, especially on the plains, for putting in cane and other quick maturing crops for ensilage and roughage.

About the middle of May I visited the Kiowa valley in Arapahoe and Adams counties, to see what effect the efforts of the ways and means committee of Governor Gunter's war council had on the farmers. Being so near the capital considerable activity was a natural expectation, but the expansion in acreage evident on every hand has been far greater than anyone could have foretold.

In normal times the practices prevailing this season on the plains are not advisable. Better preparation of ground and some regard for crop rotation is necessary. This year, however, "everything goes" because the demand for food is insistent and the prices in sight for the producer attractive. Furthermore the moisture conditions in the country just east of Denver were normal during the winter and better than normal in spring. The farmer who takes advantage of these conditions is, consequently, on safe ground.

The tractor plow has made great expansion of acreage possible in the Kiowa valley. Some twenty tractor outfits were unloaded at Bennett and fifteen at Strasburg for the adjacent farming country and I believe I saw most of them at work in a day's journey by Ford thru the valley. The big outfits were not confining themselves to daylight, either. Nothing less than three shifts of eight hours in each 24 was satisfying the demand of the farmers for turning up more sod. Electric headlights gleaming across the prairie at night furnished the best evidence that the ways and means committee and the Colorado Agricultural College authorities had not been preaching increased acreage in vain. Thirty days before this is being published someone said that 100,000 acres would be planted to pinto beans in Colorado. Two weeks later this estimate had climbed up to 200,000 acres, and I am inclined to the belief that the latter figure will be nearly right. If the Kiowa valley is any criterion the two hundred thousand figure is too conservative. At Strasburg and Bennett the claim was made that that district alone would have 30,000 acres in pintos.

In company with H. S. Covey, one of the colonizers bringing new settlers into the valley, and W. C. Dwigans of the Emmer Products company, I called on a number of farmers to learn at first hand just what they were doing toward increasing the acreage.

One of the first stops was at the farm of C. O. Strand, who came to Colorado from Sweden in 1890, drifting to the Cripple Creek district, where the gold excitement was on. He prospected the hills but found nothing of value until he came down to the plains and struck an inexhaustible deposit of wealth in the soil. His wallet promises to be very plump next fall. He has 160 acres in winter wheat, which was coming along fine, and 200 acres in corn and pinto beans. For steady revenue he depends on a small herd of milk cows that produced well during the past winter on 60 tons of corn ensilage. His silo is of the creosoted wood stave type and was filled for the first time in 1916.

Mr. Strand's corn crop in 1915 was so large that he carried over to 1916 some 3,000 bushels. This left-over corn fattened a bunch of hogs that brot him $1,600 at the Denver yards and he still has 13 bred sows that were about due to farrow when I saw them.

Mr. Strand is farming for Miss Banker, who is doing her bit in increasing agricultural production. She lives on an adjoining place. Out of her share of the 1916 crop—the year of drouth—she built a nice dwelling, a modern dairy barn, fitted with stanchions and other up-to-the-minute appliances, and a silo.

On the cover of this issue there is an illustration, the photo for which was taken on the farm of M. L. Cozad. The man driving the three big bays is C. B. Morgan. He is listing in corn of which 100 acres was planted on the Cozad place.

At the head of this article is an illustration showing Ray L. Beitler, a new comer in the country, on his 10-20 Titan, tearing up the sod for 70 acres of corn and beans, since planted. The plows pulled by the tractor are followed by the harrow, the ground being prepared for planting in one operation.

Another farm visited was that of John Schmidt, where we found two cribs still filled with corn, altho this was May 15. There were 800 bushels of this corn, which was being used for seed and feed. The pit silo was empty but grass was coming on and the milk cows were out on pasture. The corn aceraged 22 bushels per acre, a fair crop, considering that midsummer was almost rainless last year.

I saw several hundred bushels of corn in the granary of J. C. Young, who is farming 480 acres. He tried ensilage last winter and the stock liked it so well that he is now building his second pit silo. Mr. Young always has a good garden for family use and he still had potatoes on hand when I called.

Then we visited the Hahn Brothers ranch. This is their second year in the country and they are showing their "faith by their works" by putting in 100 acres of beans and 50 acres of corn. In addition I saw their winter wheat—250 acres of it—that on May 15th looked like a cash value of at least $10,000. Their corn made 28 bushels an acre last season; oats 20 bushels, and from pinto beans they got a revenue of $38 per acre on sod. They are satisfied with their start.

Across the road we stopped to take a look at Frank Hawley's farm. As time goes in the valley he is a pioneer, having been farming for ten years. His first home was a $25 shack on a homestead. He had no capital. Today he has a fine home, big barns, a well developed farm and drives an automobile. In 1916 he harvested 2,000 bushels of wheat; 30 acres of beans brot him $1,200. He has 200 acres of winter wheat, as fine a crop as one would wish to see and worth, in prospect, about $8,000. Of pintos he was planting 100 acres which, with a fair summer, should be worth at least $3,000.

In the alfalfa patch I saw a fine bunch of hogs. There are two pit silos on the place, substantial barn and granary, a good dwelling and the milk cows and chickens keep the money coming steadily while the cash crops promise to bring wealth.

On the farm of Reynolds, Covey & Reynolds I saw two tractors at work, a 30-60 Titan, oil burner, pulling six plows and two harrows, and a 10-20 Titan pulling five disks. The plows were set for seven inches and doing the work in good shape. The owners of the tractors, Kuska and Miller, two young men recently from the agricultural department of Nebraska university, were working their machines 24 hours a day, plowing for themselves and neighboring farmers. They have 1,360 acres in crop, all on their own land except about 200 acres.

On the Reynolds ranch by this time 300 acres have been planted to corn, beans and Sudan grass.

It is not possible to mention all the places I visited, but all tell about the same story.

On the C. J. Elliott farm I saw fifty acres of sweet clover, from which the weeds had just been raked. This will probably be left for seed, for which there is a big demand.

Alfalfa fields were numerous and most of them were broadcasted, tho the best practice under dry farming is to sow the alfalfa in rows, so that it can be cultivated.

Evening brot us to the ranch of Ray W. Phebus on the Kiowa, in northern Elbert county. It was the same story here on a 640-acre farm—250 acres in winter wheat, 100 going into corn and 200 into pinto beans. This ranch supports about 400 head of stock, for which feed is grown. Down in the

(Continued on page 15)

Ranch of M. L. Cozad, Thirty-Five Miles East of Denver. This Farm Has Been Developed Only Two Years From the Raw Prairie

Some Bean Diseases and Measures of Control

WHAT GROWERS MUST DO TO PREVENT SERIOUS LOSSES

Following is the chapter on "Bean Diseases," by Prof. Walter G. Sackett, bacteriologist of the Colorado State Experiment Station, from Bulletin 226, "Beans in Colorado and Their Diseases." Every Colorado grower may obtain copy of this bulletin free by addressing the State Experiment Station at Fort Collins.

PLANT beans on the same land not oftener than once in three or four years, particularly if disease has been prevalent. Soils which once become thoroly infected as a result of continuous cropping are seldom safe to use for the same or closely related crops for years to come.

2. Wherever practical, destroy all diseased vines and trash by burning.

3. If the bean straw from diseased vines is to be fed, do not use the manure on a field that is to be planted to beans.

4. As far as possible, avoid cultivating the beans early in the morning when there is dew on them, or when they are wet with rain.

5. Hand-pick disease-free pods, or if possible select disease-free plants for seed. Use these to plant a seed plat on land which has never raised beans and which is removed some distance from the main crop. Remember that hand-picking of seed as it comes from the flail or thrasher for the purpose of controlling disease is of no value, since it is impossible to detect even a small percentage of diseased seed.

6. Seed treatment for beans is of no practical value, since any chemical that would penetrate the seed deeply enough to destroy the disease-producing organism would likewise be apt to kill the seed.

7. Spraying with Bordeaux mixture, 5-4-50 formula, even when done thoroly by competent persons, is at best unsatisfactory, unprofitable and only partially successful. However, if one

Bean Pods Affected With Bacterial Blight

desires to try this, the first application should be made when the plants have their first set of true leaves, repeated ten days later, and again just after blossoming. Remember that if any real benefit is to be derived, the stems, leaves and pods must be kept covered with the spray material.

The growing of beans in Colorado for seed purposes is one phase of the industry which has developed at a remarkably rapid rate, considering the length of time that the crop has been raised with this in view. In all probability, one reason for this has been the desire on the part of the seedsmen to obtain seed grown under conditions which normally tend to reduce the percentage of diseased seed. Such conditions maintain to a greater or less extent in both the dry land and the irrigated sections of the state. The absence of moisture in the form of rain which tends to spread disease over the plants and from plant to plant, together with abundant sunshine, are both valuable assets to the localities where beans are being grown.

Another consideration which made Colorado a desirable place for raising seed beans was the fact that until two years ago the disease question was practically negligible. There was plenty of disease-free land, new so far as bean culture was concerned, on which there was good reason to believe that no difficulty would be experienced for years to come in the line of plant diseases. But the inevitable has happened, and in the remarkably short space of two years.

Someone innocently planted diseased seed, from which unhealthy plants developed, and from these as a starting point, it has been a relatively simple matter for the infection to spread from vine to vine, plant to soil, and field to field.

Where irrigation is practiced, the irrigating water, flowing as it does thru infected fields, carrying more or less trash and diseased soil with it, cannot be lost sight of as a means of disseminating the various ailments to which the bean is heir.

Our severe and prolonged winds, which may assume the form of sand storms, transport quantities of soil, irrespective of whether it is diseased or not, from one locality to another. The mechanical injury to the pods and beans which results from this incessant pounding by the sand grains not only weakens the plant, but also opens up the way for subsequent infection with germ-laden soil particles.

Some growers have failed to use beans in a rotation and have planted beans after beans on the same land, having lost sight of the fact that aside from this being poor farm practice, the dangers from disease are increased very greatly by such a procedure.

Little of any attention has been given either to the planting or the selecting of disease-free seed, with the result that we have built up a big seed business in a phenomenally short time, but a business which is destined to fail, as has been the history elsewhere, unless we can establish a reputation for our seed with respect to quality, purity and freedom from diseases.

Now is the time to do this, before our fields become generally infected and while the prevalence of disease is so slight that it can be controlled for the most part by the means that we have at our disposal.

For the present consideration, we shall confine the discussion of bean diseases to those which have been observed to occur in the state during the last two years, and which, if neglected, may prove a serious menace to the industry.

Description of Diseases

Bacteriosis or Bacterial Blight: Without doubt the greatest damage to our bean crop during 1916 resulted from an attack of the bacterial blight. This is caused by a germ, Pseudomonas phaseoli, which enters the plants thru the breathing pores or stomata and thru wounds produced by mechanical injury.

The disease is common upon field, garden and lima beans and attacks leaves, pods and stems. It is most conspicuous upon the pods and leaves and can be recognized most easily, perhaps, upon the former, particularly the wax varieties. Here we find watery spots ranging in size from tiny specks to areas three-eighths of an inch and more in diameter. They are usually irregular in outline and roughly circular in shape. On the wax varieties the spots are translucent or watery, amber-yellow in color and frequently have a rosy-red margin. Their appearance on the whole is not unlike an ordinary blister, except that they are neither raised nor sunken. In the more advanced stages, they may be coated over with a thin, pale yellow or amber colored crust which is composed largely of the bacteria which produce the disease. Ulcers in all stages of development can usually be found on a single pod. When the lesions are numerous, they frequently coalesce or run together, so that the whole side of the pod presents one continuous canker.

The injury to the leaves is very marked. In the early stages, irregular, watery spots can be found scattered over the surface which soon turn yellow and in a short time become frosty brown in color. If the spots are numerous they will often coalesce and give the dry, brown leaf a peculiar blistered appearance. The tissue in this condition is extremely brittle and is easily torn and broken, which accounts for the ragged condition of blighted leaves. The stems are affected in much the same way as the foliage.

Badly diseased plants lose their leaves early and fail to mature their seed. Spotted pods are unfit for the market as green beans, and seed from them is very apt to be diseased as the infection is communicated to the seed from the pod.

Pod-Spot or Anthracnose

Pod-spot or Anthracnose has been of relatively little importance thus far in Colorado bean fields, but because of its ravages in other localities, it seems advisable to become acquainted with its symptoms in order that it may be recognized should it become serious.

The disease makes its first appearance on the seed, leaves and stems of the seedling plants. It manifests its presence there by brown, discolored, sunken spots or ulcers, indicating rather clearly that the causal fungus, Colletotrichum lindemuthianum, has been carried over winter in the seed.

In due course of time, spores, by means of which the disease is spread, are produced in these early spots. Eventually they are blown, or otherwise carried to the growing stems, leaves and pods, where they soon become established and begin their destruction.

On the leaves we find reddish or blackened areas developing along the large veins on the under surface. The veins may be eaten thru by the fungus and destroyed, while the blade shows numerous cracks or holes with shriveled, blackened margins. Leaves in this condition are practically worthless as food building organs, and as a result the nutrition of the plant is greatly impaired; either the yield of seed is reduced appreciably or the seed fails to mature.

Previous to the time of blossoming, the attack has been concentrated against the leaves, and by the time the young pods make their appearance the fungus has become well established and is amply supplied with spores. These soon find their way to the young, tender pods, where they produce rusty-brown or black sunken spots with reddish or yellowish margins. These vary in size, much as the bacterial spots previously described. The spores of the fungus are produced in the center of the black ulcers and form little pink masses visible to the naked eye. They are glued together with a mucilaginous material which sticks them securely to the spot. However, as soon as a drop of moisture touches them, the mucilage is dissolved and the spores are set free in the water. At this time any disturbance of the plant is apt to scatter the spores in the flying drop of water, and for this reason beans affected with anthracnose should never be cultivated while the dew is on them or while they are wet from a shower.

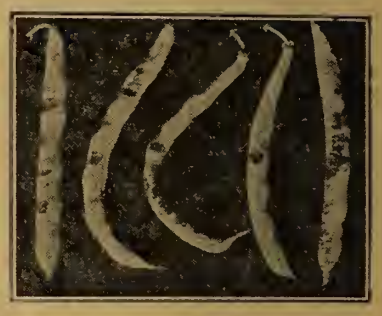
Bean Rust

Bean rust was observed in several fields last year, but it came so late in the season that little if any damage resulted. The causal fungus, Uromyces appendiculatus, attacks the leaves, stems and pods. The rust, as the name implies, can be recognized in its summer stage by the small, raised, rusty-brown powdery specks on the under side of the leaf, which rub off easily with the fingers as a rusty-brown powder.

In the winter stage the specks are black in color and occur on both surfaces of the leaf. When found on the upper side they are usually surrounded by a light border, apparently where the green leaf tissue has been killed. While the rust is not uncommon, it has rarely been of sufficient economic importance to cause any considerable alarm. Of course, if the attack should come early in the season and be very general, the crop would suffer in proportion as the vitality of the plant was affected. As the disease winters over on the leaves, the destruction of these by burning offers the best means of eradication.

Bean "Streak"

For want of a better name, the term "streak" is used here to designate what appears to be a new and undescribed disease of beans, which was observed in Colorado for the first time during the summer of 1916. Whether this is in reality something new, or merely a different manifestation of an old trouble, remains to be seen. It attacks stems, leaves and pods, the symptoms on the first two of these being much the same as with the bacterial blight. On the pods there ap-



Bean Pods Affected With Streak

pear peculiar rusty or orange-brown discolorations in the form of irregular splotches, just as if a brown stain had been spattered on them, and had run down in lines or streaks. The side of the pod next to the plant is practically free from the discoloration, while the outer side may be more or less affected over its entire surface. The leaves are destroyed and the plants become defoliated before the crop matures.

It is our purpose to make a study of this disease during the coming summer and to determine, if possible, its cause and control.

Measures of Control

The measures of control which can be recommended for any one of the diseases described apply equally well to all. Accordingly this phase of the question has not been taken up in connection with the individual diseases, but has been reserved for consideration as a whole.

(At the beginning of this article will be found Prof. Sackett's recommendations relative to control of bean diseases.—Editor.)

An Implement Shortage

It is reported that the apportionment of steel to the manufacturers of farm implements for the coming year as allotted by the Council of National Defense is to be about one-half of the amount used last year. Should this report prove to be true, a scarcity of farm implements will follow and higher prices for them may be expected.

How can you as a farmer help relieve this condition?

First.—By selling or loaning any implement you will not use yourself; your implement dealer, county agent, Farmers' union or commercial club will be glad to help you sell it to someone who needs it. Many improvements have been made upon the implements of ten years ago, but most of those implements did effective work and many of them were never worn out

Second.—In neighborhoods where there is a severe shortage of implements a united effort should be put forth to keep all available machines at work during every daylight hour.

Third.—Overhaul all machinery as soon as possible and order necessary repairs at once. Delay and slow delivery should be no surprise and on many of the older machines it may be impossible to obtain the repairs. Broken castings may often be welded by the oxy-acetylene process used by many blacksmiths and automobile repair men.—Emergency Bulletin, Nebraska College of Agriculture.

Colorado Bean Growers form an Organization

EVERY PRODUCER IN STATE INVITED TO BECOME A MEMBER

WITH an estimated acreage in Colorado of 190,000 to 200,000 in pinto beans, the growers are faced with problems of marketing that make the need of organization urgent. To meet this need a conference was held in Denver May 29th, at which the Colorado Bean Growers' association was organized. This conference was called by the United States Office of Markets, Mr. W. H. Kerr, chief of the Colorado division being in direct charge. Mr. C. E. Bassett had been sent out by the Washington office to advise with the Colorado growers, and his suggestions were based upon experience in Michigan, where the growers of white beans have an organization that, in the first year of its existence, saved them some $2,000,000.

Every Colorado bean grower who is not a member of any association of jobbers, brokers or others whose interests might conflict with the interests of the grower, is eligible to membership and should get in touch immediately with Prof. Alvin Kezer, Agricultural college, Fort Collins. Prof. Kezer was elected secretary of the association. He will furnish full details to all who inquire concerning the formation of county organizations, etc.

The other officers elected are: J. M. Collins, Eaton, president; Charles Haupert, Bennett, and E. H. Swisher, Wiggins, vice-presidents; W. H. Cooper, Kendrick, treasurer.

Following is the statement of the objects and principles of the organization, as issued by the executive committee, comprising the officers above named:

Colorado Bean Growers' Association

The Colorado Bean Growers' association is a non-trading, non-profit farmers' co-operative organization without capital stock, organized for the purpose of mutual help of its members.

The objects are to secure and furnish to its members reliable, accurate information as to the average cost of production, the crop yield in Colorado and other bean producing states, the market demand for all varieties of beans and for other food products that may be a substitute for, or a competitor with Colorado beans.

Membership shall be confined to bean growers of the state of Colorado who are not affiliated with any jobbing, brokerage or other association or agency the interests of which might conflict with the interests of this association.

The annual fee shall be fifty cents, payable in advance.

Officers: The affairs of the association shall be managed by an executive committee made up of the officers of the association—a president, two vice presidents, secretary and treasury, elected annually by the membership.

Methods of Operation: Each bean-producing county shall have a county bean growers' association with a president, vice president and secretary-treasurer. The county organization shall work in harmony with and under the direction of the central or state organization. Each bean producing section, preferably a voting precinct, shall have a recording officer who shall make direct reports to his county bean growers' association regarding the acreage, condition of crop, any serious injury that may occur, and at time of harvest, a careful estimate of total production and quality. Each organized bean county shall make a composite report to the executive committee, and as soon after harvest as possible this committee shall meet and canvass the reports received from the growers, from state and national authorities and all reliable market information available. As a result of this canvass they shall report to the membership a price which they believe represents the true economic value of the various kinds and grades of beans produced in Colorado, and shall indicate what they believe would be a fair advance in price for each succeeding month. At no time shall the executive committee, any of its members, or any of the members of this association enter into any agreement with each other relative to fixing the prices at which they agree to sell. Each member shall fix his own price for the sale of his own product, regardless of what any other member may decide. The economic price determined by the executive committee is only to be a guide to the member in establishing the price for his own product.

This association shall co-operate with similar associations in other bean producing states in establishing uniform grades, encouraging the production of pure seed and the elimination of fungus and disease pests, and aid in all ways possible to improve methods of production and in securing the best possible means of marketing, storing, and distributing the bean crop of the state of Colorado, and in all other ways deemed necessary and advisable assist the members in matters which will be of mutual interest.

Further need for organization is found in the fact that there is a serious shortage of harvesting and threshing machinery for handling the bean crop. Some plan of exchange of implements may have to be worked out by the association. The thresher problem is especially pressing. All growers are urged to consult with their dealers at once regarding bean machinery of all kinds. The following letter from the Gale Manufacturing Company of Albion, Mich., will give a fair indication of conditions:

"Western Farm Life: Replying to your letter of May 31, by Mr. Edmiston, regarding the bean industry. Our attention has been called several times to the remarkable growth in the acreage of beans in the state of Colorado. In fact, we enjoyed a very large trade on bean harvesters in that state last year, but we regret very much to advise that we are unable to furnish any more bean harvesters for the coming season, due to our estimates being already oversold and our inability to obtain any more raw material in time to make up complete machines for this season's trade.—Gale Mfg. Co."

Announcement

Every bean grower in Colorado is invited to become a member of the Colorado Bean Growers' association. It is true that there is a world-wide shortage of food and that every pound produced will have a value. However, let us not forget that Pinto Beans are a new product on the world's markets. If Colorado growers desire to be paid full value for their beans they will have to take steps to insure fair treatment. The government is willing to assist in solving all marketing problems, but to do this effectively the thousands of growers must get together and take united action. Read the accompanying statement of objects and principles and if it meets your approval send your name and address to Prof. Alvin Kezer, Secretary Colorado Bean Growers' association, Fort Collins, Colo. He will tell you about the plan for county organizations, which must be formed in the next sixty days if the growers expect to get the advantages of organization for the present crop year. Prompt action is necessary. Send in your name; the cost will be only 50 cents a year and the benefits will amount to many thousands of dollars, if growers are willing to lend a hand.—Editor.

Field Peas and Oats Excellent for Ensilage

MOUNTAIN FARMERS NOT FORCED TO DEPEND ON CORN

E. J. [illegible]INGS
Dean of Agriculture, University of Idaho

THE storing of various sorts of succulent crops is and has been a common practice in Continental Europe and in the British Isles. The livestock men of the old world have always had a very high appreciation of grass and of substitutes for grass. As a result they have used and considered root crops as foundational in animal feeding and for similar reasons used rudely constructed silos for preserving feed material in a form comparable to grass or roots. Many of our animal husbandmen who have had the opportunity of making a personal study of conditions across the Atlantic feel that a great deal of the success attained there in animal breeding and feeding is due to the wise use made of various sorts of succulent feeds.

America, except in a few districts of comparatively small area, has not taken readily to the growing of root crops. To grow roots successfully requires the best kind of farming and a great deal of hand labor. Farming in America as a whole is on a large scale and not intensive as compared with European methods. In addition, hand labor has always been expensive here and hard to secure.

It is only natural, then, that a method of securing similar results as compared with growing and feeding roots and methods that can be handled on a larger scale with less hand labor should appeal most strongly to the American farmer. The first pit silo of record in America was constructed in 1877 and the first above-ground silo two years later. Progress was slow for a few years due to lack of appreciation and knowledge of the value of silage and due to certain prejudices only to be expected before the universal acceptance of a new idea. One of the early thots was that the acid of the silage would eat away or destroy the stomachs of animals, and for years certain well known creameries would not accept milk from cows that had been fed silage.

Silo a Permanent Thing

Practically all of the above is now past history and the silo and silage feeding are with us to stay. Where a few years ago there was a silo here and there many miles apart, silos of thoroly modern type and of large capacity dot the landscape and the farmers could not be induced to give up the silo regardless of substitute methods offered. The silo came first into prominence in the corn belt where corn is the natural and universally successful silage crop. As the corn growing area moved north and west the silo went along until today there is scarcely a well developed farming district in America that has not made some acquaintance with silage feeding.

The present tendency in silage investigation is toward tests of crops other than corn for the silo. The Kansas Experiment Station has made exhaustive tests of kafir corn silage, milo maize silage, and sorghum silage and has had most favorable reports to make. In addition the Kansas station has tested the siloing of alfalfa alone and in various combinations with syrup and other carbohydrate material. Nebraska and Iowa have done some good work in investigating silage fermentation and have added considerably to our knowledge as to what takes place in the silo after it is once filled with green material. Some of the western experiment stations have become interested in silos and silage and have initiated work aimed to bring forth information in regard to silos and silages that can be made of practical benefit to the farmer.

Experiments in Idaho

The Idaho Experiment Station, under the immediate leadership of its Department of Animal Husbandry, has for the past three years been conducting work aimed to discover what can be done with silage made from crops other than corn. There are many sections of Idaho that grow corn with wonderful success. The writer saw last summer in the vicinity of Buhl, Idaho, corn grown for silage that was larger and would probably yield heavier tonnage than anything he has seen in considerable experience in the Mississippi valley regions. The warmer irrigated sections are able to mature corn and raise heavy tonnages of corn for silage. Other sections such as the bunch grass lands of Latah county, grow a corn smaller in stature, but a corn that makes excellent silage.

Many sections of Idaho do not grow corn successfully now and some sections may never be able to grow corn. The aim at the Idaho station has been to find a satisfactory crop other than corn that can be used in sections outside the probable corn growing regions. Tests have been made with many crops and far more success has been had than was anticipated when the work was started. The Idaho Department of Dairying is equipped with one 150-ton silo; the Department of Animal Husbandry with two 45-ton silos and one 60-ton silo for beef cattle and a 20-ton silo for sheep; the Department of Agricultural Chemistry has constructed thirteen three-quarter ton wood stave silos for testing out many different silage mixtures. Last year in the various concrete and wood stave silos mentioned there was preserved fifteen different silage mixtures.

Various Mixtures Tried

By careful methods in cutting in the field, in cutting into lengths for the silo and in packing and watering all the various mixtures were successfully preserved. In the small silos there was preserved alfalfa, peas, clover, oats, and straw. The four first named were preserved alone and in combination with straw and other material. Some thesis work was done by senior students in feeding these various mixtures to dairy cattle. The alfalfa, clover and peas came out of the silo free from mould but had a very dark color and lacked the mildly acid odor common to good corn silage. The material that came from the silo

(Continued on page 9)

Speckled Beauties That Bring Ranchman 75 Cents a Pound

Mountain Trout as a Side Line

A SOURCE OF FOOD THAT IS BEING NEGLECTED

H. L. FORD

PAYDAY on the "J. R." ranch doesn't bother E. A. Ford and W. D. Henderson at all. In fact, it doesn't even put a kink in their pocketbook. Instead of dipping down into their bank account, these men dip down into the waters of their lake and pull out mountain trout. By this unique little plan the owners of the "J. R." ranch pay all of their help on the place and also net a neat little profit from the "speckled beauties."

The ranch is located at Ruedi, Colo., on the Frying Pan river. The stream, for it can hardly be called a river, is one of the choice trout streams of the Colorado sportsman. It dashes down over the rocks and thru the pines of the Rockies and empties its water into the Grand river. At Ruedi, in a narrow valley, where Ford and Henderson raise enough feed to winter about 500 head of cattle annually, the ranchers have constructed an artificial lake. The bed of the lake was formerly the old bed of the Frying Pan, whose course was changed when the Colorado Midland railway made its appearance in this community.

This eight or ten acres of water is stocked every year with 30,000 or 40,000 minnows, which are obtained from a private hatchery at a low cost. The spawn in the lake are "stripped" by the hatcherymen and then they are taken to the hatchery to incubate. Fifty per cent of the spawn are taken by the fishmen for their compensation for collecting the eggs and the remainder are shipped back to Ford and Henderson. This remainder usually amounts to about 30,000 annually.

Caught in Gillnets

Hay land surrounds the lake on all sides and it is from this land that the crops are raised to feed the cattle. The trout in this lake are so plentiful that the sport of catching them is ruined. They are caught in gillnets, which are of a size so that only the larger fish are trapped for market. These nets are put in at night and in the morning the nets are "run" and the live fish are kept in a "live box" until they are wanted for market. The live box is located in a stream of fresh water so that the trout will retain their natural color and firmness.

The "speckled beauties" are sold for 75 cents a pound and it is no trouble to market them. During the summer months is the only time that the industry is carried on and in this season of the year the demand for the trout runs high. The fish are dressed, packed in grass and burlapped. They are shipped by express for several hundred miles away and in this way they are sold to the hotels and restaurants of the larger cities of Colorado. Dining car companies create a profitable trade for this little sideline of ranching.

The lake serves a two-fold purpose. In the winter ice is cut from the lake and enough is stored to supply the ranch all year.

Pays His Labor Bills

Mr. Ford reports that all of his harvest help and extra labor on the ranch are paid from the lake. The industry requires very little time from the regular routine of work and the returns accrue very rapidly. As many as 50 pounds of fish are sold weekly for about three months during the summer. The trout require no feed as the insects and smaller water plants provide an ample means of food. The lake is supplied with fresh water from two mountain streams.

The place was at first used for tourists to cast their line and reap the harvest, but the owners have done away with this practice and now carry on the fish business as a sideline to their regular ranching. The returns average $35 a week and usually total about $550 for the season. The ice cut from the lake in winter will offset the expense of maintaining the fish pond and $500 can be set aside as profit. It is a source of income that could be developed by many other mountain ranchmen.

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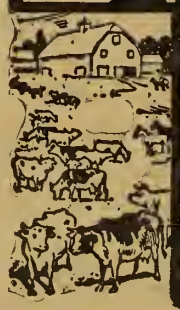


Canadian Farmers Profit From Wheat

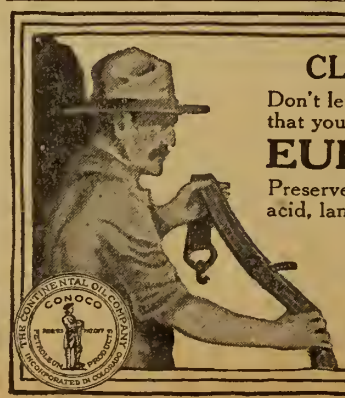
The war's devastation of European crops has caused an unusual demand for grain from the American Continent. The people of the world must be fed and wheat at over $2 per bu offers great profits to the farmer. Canada's invitation is therefore especially attractive. She wants settlers to make money and happy, prosperous homes for themselves by helping her raise immense wheat crops

You Can get a Homestead of 160 acres FREE and other lands at remarkably low prices. During many years Canadian wheat fields have averaged 20 bushels to the acre—many yields as high as 45 bushels to acre. Wonderful crops also of **Oats, Barley and Flax.**

Mixed Farming as profitable an industry as grain raising. The excellent grasses full of nutrition are the only food required for beef or dairy purposes. Good schools, churches, markets convenient, climate excellent.

There is now an extra demand for farm laborers to replace the many young men who have volunteered for service in war. The government is urging farmers to put extra acreage into grain. Write for literature and particulars as to reduced railway rates to Supt. of Immigration, Ottawa, Canada, or

J. L. PORTE
Dunn Block, Great Falls, Mont. Canadian Gov't Agt.



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Raising Seed for the Dry Farm

AN INDUSTRY THAT OFFERS BIG RETURNS

E. R. PARSONS

WITH the prices of our farm products higher than they have ever been and still soaring, we find seed stocks pretty well exhausted and selected grain for planting almost impossible to obtain at any price. Anyone can see that these conditions will last; for the same contributory causes must exist for a long period. If the war were to stop tomorrow it would still be years before the belligerent countries could be fully restocked with edibles, and the re-establishment of antebellum agricultural conditions in the enormous area involved would require even longer.

We can therefore look forward to high prices for a number of years, and it is a question as to whether they will ever return to what we have come to consider as normal.

The price of seed is always from 50 to 100 per cent higher than the market price of the product itself and considering that more than 75 per cent and sometimes the whole crop may be sold at these figures, it is obvious that big profits are awaiting the seed farmer.

We have always stood for the idea that the farmer should raise his own seed. Today we have no hesitancy in saying that he should not only do this, but should take advantage of the time which has provided a rising market and raise every pound he can to supply the public demand at premium prices.

The Psychological Moment

Right now is the psychological moment to start a business of this kind and the future will take care of itself, for it is becoming more and more recognized that adaptation, and acclimatization are big factors in evolution and that seed which has been inured to drouthy conditions for a number of generations is the only kind safe to plant in the semi-arid regions. And it is not only dry farmers who are anxious to secure these seeds. Among the irrigating farmers are many who have limited water facilities and who are discovering that by making use of dry farming methods and dry raised seeds, they require less water per acre, and in some cases can, for this reason, double their crop area.

In considering the possibilities of different crops, Sudan grass at 40 to 50 cents a pound seems the most alluring.

It is only in the warm plains country, in the milo and kafir regions, that this seed can be raised; but there is plenty of room there yet. At a conservative estimate a crop of Sudan grass which will produce three to four tons of fodder per acre, if allowed to mature, will produce from 1,000 to 1,500 pounds of seed in the right soil and climate, which would fetch at present prices about $600. Can you beat it?

The work is easy, the labor expenses no heavier than those of a crop of corn, and it is not difficult to harvest, for it can be cut with a binder and threshed with an ordinary thresher.

Shortage of Seed Corn

Unlike Sudan grass, seed corn can be raised almost anywhere in the dry farming country and the demand for the best drouth resistant varieties has never been fully met. Every year there is a shortage at planting time, and the lucky farmer who has saved some, can obtain almost any price he has a mind to ask for it. In some of our deep plowing communities a 40 to 50 bushel crop per acre is becoming a common occurrence even at high altitudes.

Just a boy, up at Calhan, 6,300 feet above sea level, raised last year 48 bushels on an acre. Anyone can do it. Deep and thoro tillage and a little humus in the soil with thin planting are all that is necessary. The man who raises a 10 or 15 bushel crop can, by using another horse on the plow, just as easily raise a 40 bushel crop, which at five or six cents a pound would bring him in about $200 an acre, which is ten times as much as we used to be satisfied with; but all signs point to the fact that the bannor days of dry farming are here now. People are beginning to discover how easy it is to raise crops on our cheap dry lands by merely following a few simple rules, and twenty years from now, if all our farmers follow deep tillage, the dry farming area will almost feed the United States and prices will take a tumble.

Another staple product in the seed business for which there is always a great demand, is alfalfa. The finest type of this seed with the highest germinating potency is that raised on the dry farms. This is so well understood by alfalfa growers that very little of such seed ever appears on the market. It is all engaged, bought, and paid for, long before planting time.

Dry Farmed Alfalfa Seed

On the writer's ranch the best seed was always obtained from their own field and in comparing it with the commercial variety it was found that five pounds of the former would make a better stand than 10 pounds of the latter. The reason is that in irrigated fields (usually over irrigated), there is always considerable free water at depth, and the long alfalfa roots, being able to tap this supply, the plant never entirely ceases to grow thruout the season; the consequence of this is that, at whatever period the harvesting may be done, it is always found that the seed has ripened unevenly, some being over-ripe and some too green. On the dry farm this trouble exists; but it is not nearly so marked, there being a much larger proportion of seed which ripens evenly.

When the price of ordinary store alfalfa is 15c the dry farm variety should be 30c, and it is natural to suppose that when enough of it is put on the market to justify a quotation, these figures will not be far wrong.

There is only one satisfactory method of raising alfalfa seed without irrigation and that is by the row system. The first cutting for hay, and the second for seed has been the rule; but some are now recommending the former for seed and the latter for hay, on the ground that more and larger seed is obtained from the first cutting, altho the second is usually more evenly ripened.

Since it is impossible to raise two crops of matured seed in one season in our middle and northern latitudes, we must choose between a good crop of seed and a slim cutting of hay, or vice versa. In the former case, the yield may be from 600 to 800 pounds of seed; in the latter from 200 to 500, more or less according to tillage, soil and precipitation, for alfalfa is a variable crop.

At 20c a pound, $100 an acre for seed alone is a highly remunerative return from a crop which, once established, needs no replanting for many years; but we note that as high as 50c a pound has been paid this year for small stocks of dry raised Grimm alfalfa. It pays to specialize.

Sorghums Also in Demand

The seeds of milo, kafir, and all the sorghums can be profitably produced on any of the dry farms in the hot plains country. Milo will often run to 50 or 60 bushels per acre and the others not far behind. The price is seldom less than three or four cents.

Pinto beans are coming more to the fore every year as a cash crop in the dry regions and the seed is scarce this year at 16c. There is not much difference between raising beans for market or for seed, except in holding them for the price and in planting them as early as the climate will allow, in order that they may be harvested in the dry weather after the summer rains, and be bright and clean when offered for sale.

Such crops as Turkey Red winter wheat, Swedish select oats, and fall rye, when of good quality, will all bring the farmer more in the seed than in the grain market, and the way to realize on them quickly and surely is to advertise. We have known a thousand dollar crop to have been sold before Christmas by an ad costing $2.50.

The future holds all manner of possibilities for the dry farmer in the matter of seed potatoes. In the countries of Europe where a 600 or even 800 bushel crop is no uncommon occurrence, they do not favor cut potatoes for seed, neither do they want the small culls which are screened from a market crop.

The farmer in the potato belts, in his highly fertilized soil, raises tubers for the table, while the man outside plants closely, and produces almost as much weight in small seed potatoes, for which he receives more per pound than the other fellow.

All thru our western country we find similar conditions, potato belts where the soil is right for raising good sized tubers, and other districts where it is almost impossible to produce a potato as large as a hen egg. In these latter the dry farmer of the future will raise seed potatoes by planting cuts and culls from the potato belt adjoining. Thus (if successful here), the rotation will be established—one generation in the potato belt, the next in other soil producing only the immature potatoes for seed.

It is argued that stunting, or checking the growing proclivities of the potato by planting it in an unfavorable environment, reacts in the next generation by causing it to flourish with extraordinary vigor when restored to a congenial medium.

The potato, especially on dry land, is attracting much attention from agriculturists and experts at the present time, and these methods will doubtless be accorded some experimentation to determine their value under irrigation and dry farming conditions.

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We have been treating our oats with blue stone before planting and there is a good deal of light oats comes to the top. What we want to know is whether it would be all right to feed them to hogs or other stock, or if there would be any injurious effects in feeding them after having been in the blue stone solution?—J. W. S., Durango, Colo.

It is dangerous to use oats that have been treated with blue stone (blue vitriol) to stock, as this substance is poisonous. For that reason the formalin treatment for smut in oats is usually preferred, as grain thus treated can be fed to stock, the formalin leaving no poisonous substance upon evaporation.

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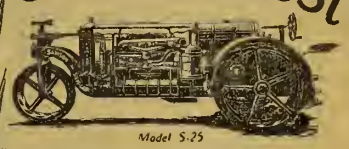

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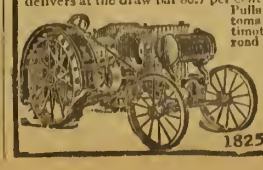

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Western Farm Life

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The Implement Situation

The implement situation presents another serious problem confronting the farmer as a result of the war. On top of the shortage caused by the demand of raw material diverted from the manufacture of farm implements and machinery into war channels, comes the cry for greater acreage in speeding up food production. This double pull on the implement maker, withdrawal and increased cost of raw material on one side and extraordinary demand for new machinery on the other, has created a situation that demands the prompt attention of the Council of National Defense. If it is true that food production is just as important as the actual defense of the nation—and nobody doubts the statement—then those in authority should carefully preserve the balance between the apparently conflicting demands for raw material needed for production and defense. This part of the problem is having attention from the National Implement and Vehicle association.

We feel that the farmer can do his part in preventing congestion and delay by placing his orders far in advance of actual need of the supply, of whatever character it may be. Let us not lose sight of this important fact —the war is not a matter of the 1917 crop season. Demand for foodstuffs will continue. Even at best, which would mean a sudden ending of the war this year, it will require thereafter fully another year to establish the equilibrium. No such good thing is in sight, however, and patriotism as well as business sense commands the farmer to plan for abnormal conditions for at least two and possibly more crop seasons.

For that reason he must take into account his possible requirements of tools, vehicles, machinery and implements of all sorts and place his orders early. The country dealer can be of considerable help by forecasting, thru investigation of increased acreage, demands for machinery of various types, and from him that information should be conveyed to the manufacturer promptly. In this emergency, as never before, we must all help each other if we expect to be helped ourselves when we need it.

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Market for Surplus Fruit

Here is a suggestion that should be worked out by the Grange, the Farmers' Equity Union or some other organization. There is on the editor's desk a letter from a housewife in the plains country, who wants to know why she has to pay two or three prices for canned goods, or fresh fruit when that is in season, when thousands of tons of fruit goes to waste in the mountain districts every season.

There are few family orchards in the plains district. The farmers there are engaged in grain and forage production. The main business is to produce meat and milk. The dry farm garden is neglected, not always from choice, but usually because the demands on time are so great from regular farm work. This forces the housewife to look to the supply store for fruits and often very largely for vegetables.

Over in the mountains, perhaps a hundred or two hundred miles away, there is produced the finest fruit in the world, usually in such ample quantity that much of it goes to waste. Cannot some method of distribution be devised that will provide for the shipment of second grade and culls in bulk to the towns in the dry farming districts, to be sold at reasonable prices to the dry land farmers?

Farmers' organizations that are represented in both the mountain and plains districts could probably work this matter out. The Grange has a state purchasing agent who wants to serve the people of his organization in just that way. Direct buying is not always practical but in a case of this kind, where there exists an active demand for a portion of the fruit growers' output not included in the first-class pack, it would be worth trying. The haul is so short that canning fruit could be handled without loss. The women of the plains would like to do their share of perserving for winter use if they could buy fruit at reasonable prices.

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Call Them Pinto Beans

Colorado bean growers are adopting the suggestion of the Agronomy department of the Agricultural college and attempting to confine themselves to the production of pintos for market purposes, also adopting that name for the beans instead of calling them Mexicans. Prof. Kezer points out that the term "Mexican" covers many varieties, while pinto applies to a definite variety and the one of all the "Mexican" beans that is recognized in the price quotations.

Over the line in New Mexico, where the bean industry has been established "from time immemorial," in fact, since the earliest settlement of Spanish-American farmers and before that among the aboriginal inhabitants of the southwestern semi-arid country, the growers are adopting the term "New Mexico pinto."

M. R. Gonzales, the agriculturist of San Miguel county, is the recognized authority on beans in New Mexico. On the subject of the market variety he says:

"New Mexico Pinto Beans: This is the correct name for the so-called Mexican pintos. Do not forget that there is a vast difference between the New Mexico pintos and the Mexican pintos. Mexican pintos may be of two or three colors—mottled, black and white, yellow and white, pink, purple, tan, blue, red or any other color—all originating from Old Mexico. New Mexico pintos are of a light cream color, mottled with dark tan. The little spots are evenly distributed in the light cream background. Beans with stripes, or half white and black, or almost entirely dark or red, should never be classed as New Mexico pinto beans. The New Mexico pintos are a native production of New Mexico. The people of Mexico have raised them from time immemorial. Unconscious of the fact, they have developed this bean for the simple reason that they have an excellent flavor, mealy and very nutritious. They are heavy yielders, drouth-resistant and do not shatter at the time of cutting. Over 95 per cent of all the beans grown in San Miguel county are of this type."

In comparing the description of pintos given by Prof. Kezer with that of Mr. Gonzales it will be noted that they are practically the same, tho there is some difference in terminology. Kezer calls them "buff colored speckled with tan to brown," while Gonzales says they are "light cream, mottled with dark tan." Buff is light yellow shading toward pink, gray or brown. Cream colored also means light yellow. So for all practical purposes there is no difference between the pintos of Colorado and the New Mexico pintos.

The trade now generally understands what is meant by pinto beans, and while New Mexico state pride may insist on using the state name as a prefix, this adds nothing to the value of the product. The grower can help himself a great deal by dropping the use of the term "Mexican" beans, if he is growing pintos, and still more by dropping any variety that does not come up to the standard grade of pintos.

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Defends Peoria Location

Editor Western Farm Life,
Denver, Colorado.
Dear Sir:

In a recent number of Western Farm Life you had an editorial criticising the Board of Governors of the International Farm Congress (the Dry-Farming Congress) for locating the congress and exposition at Peoria, Ill., for 1917. The editorial referred to intimates that financial considerations were alone responsible for this location, and that it is not likely that men from the western agricultural institutions will be sufficiently interested to attend this year.

For your information, permit me to state that the interest of the men connected with western agricultural institutions seems in no way abated, and indications are that more of them will be present at Peoria than were at either Denver or El Paso. Furthermore, a number of them were present at the meeting of the Exhibitors' association at El Paso last fall (every western state was represented in that meeting) when the following resolution was adopted unanimously:

To the Board of Governors,
International Farm Congress.
Gentlemen:

We, the members of the Exhibitors' association of the International Soil-Products Exposition, respectfully urge upon your attention the desirability of holding this congress and exposition in some city of the Cenertl or Eastern states, at least every two years. In making this suggestion we realize the desire of the Board of Governors to advance the principles and widen the field of endeavor of the dry-farming cult. We feel, however, that this object can be as satisfactorily realized by meeting, at least occasionally, in what is known as the humid sections. While we do not feel that the congress or exposition should evolve into a land-selling scheme, we do approve the stated purpose of the organization to aid in the population and land settlement of the West; and we herewith present our belief that all the best purposes and principles of both the congress and the exposition can best be served by the selection of a city of the Central states for next year's sessions. We are submitting this request in the sincere and sole desire of aiding and promoting the best interests of the world's most remarkable exposition.

The men forming the Exhibitors' association were composed principally of citizens of Colorado, New Mexico, Arizona, Texas, Oklahoma, Kansas, Nebraska, South Dakota, California and other western states, who were in charge of state, county or district exhibits at El Paso. These were representative citizens in every sense, and acted only from consideration of the best interests of their respective states.

Very truly yours,
W. I. DRUMMOND,
Chairman Board of Governors.

Farmers Asked to Aid Red Cross

Grim, remorseless, cruel war, like the juggernaut of the Hindoos, crushes all that comes in its way. Everybody suffers when war strikes a nation. War has no redeeming features; no bright side. No apology can be made for war. but there are times when necessity compels us to resort to this final weapon in defense of a principle, or for the protection of our homes. In such a time everybody must make sacrifices without a murmur. These words are said by way of introduction and not as an apology for what follows.

The farmer has been called upon to increase his acreage, in the face of added cost; he has been asked to buy Liberty bonds; he has been informed that his income will be heavily taxed; he has been urged to give his sons to the nation. He has responded nobly to each and every call and he must understand that these calls will continue to come to him, as to all of us, so long as the war lasts. This is a period of abnormality; a time such as none now living and few who have ever lived, have experienced.

So far this country has been free from warfare on its own soil, consequently the burden rests upon us, to a greater extent than upon any other nation, not only to feed the armies in the field, but provide for those in want and distress. The latter need has never been greater since history began, for never has there been, in an equal period of time, so great a loss of life, with its consequent suffering and deprivation of surviving dependents. Entire nations have been devastated; fields lie fallow for want of workers; millions of non-combatants are kept from starvation only by the generosity of those more fortunately situated.

The American people have assumed the task of ending the terrible conflict as swiftly as manhood, means and munitions can do it, and the major share of the burden of providing for those made homeless by the war.

President Wilson has set aside the week of June 25th as Red Cross week. In that period a special effort is to be made to increase the contributions that are being sent to Europe to relieve suffering. As has been previously announced, the Colorado Farmers' Congress, at its annual meeting in January, adopted a plan known as the Acre War Relief or War Sufferers' Acre, this plan to be open to all farmers in the state. The work has been systematized in such a way that generous farmers may give according to their means, or according to the type of farming followed. The acre is not the sole unit, the area to be contributed being based upon the kind of farming, or the financial circumstances of the farmer, whether owner or tenant. Only the proceeds of the relief plot are desired; not the product itself, and no money is to be sent until after harvest.

All of these details are given in a circular which will be sent to those desiring copies of the pledge. This may be obtained from any member of the committee in charge, or from any Methodist, Episcopalian or Congregational minister of Colorado, or from the secretary of any Farmers' Union, from any county agriculturist, from Western Farm Life or direct from the secretary of the committee, Mr. C. L. Hover, of Longmont. Other members of the committee and their addresses are: David Halls, Mancos; E. R. Bliss, Greeley; Prof. H. T. French, Fort Collins; George McCarroll, Denver; R. M. Haythorn, Eaton; J. G. Evans, Wray; L. M. Rogers, Grand Junction; Frank Eldredge, Durango; A. E. Newcomb, La Jara; George Bushyager, Craig; L. F. Bramier, Burlington; H. W. Bowman, Trinidad.

The committee will not handle any funds. All contributions are made payable to the American National Red Cross. Personal checks are to be sent to Mr. J. A. Thatcher, treasurer of the Colorado State Red Cross board, care Denver National bank, Denver.

Governor Gunter has given his endorsement to the plan of the Farmers' Congress. The president of the United States is president of the American Red Cross. Nothing further need be said concerning the responsibility of the organization which will disburse the funds contributed by Colorado farmers. Let us hear from you if you wish full details. Every farmer who desires to help should send in his name at once, so that the committee will know what is ahead of it.

Alvin T. Steinel
Managing Editor.

Comment by Farmer Putnam

OUR MISSOURI FRIEND HELPS ORGANIZE THE COLORADO BEAN GROWERS' ASSOCIATION

Denvor, Colo., Juno 10, 1917.

EVER oat any pinto boans? Well you botter git used to 'om. Colorado's a growing about 190,000 acros of pintos this yoar; Now Moxico's got maybo 150,000, and Wyoming and somo of our other mountain states quite a few. Git your poncil and do some figgerin'. That's about as many beans as they is dollars in Secretary McAdoo's Liborty Loan. (Did you buy that bond yot?)

I was a-tellin' Josephine—that's my wife—about the Colorado Bean Growers' association that I helped organize.

"You holpod organizo it?" she sez, snickerin' like. "How could you help? You ain't no bean growor; you're nothin' but a bean eater."

"That's what I told 'om," I soz, "and thoy said I was on the right track. We needed a lot moro bean eaters then we did growers."

"Well," she sez, "I'm glad they're organized. It's worth a thousand dollars to me."

"Air you thinkin' of growin' beans?" sez I.

"Nary a bean," she sez, "but if them growers is organized I got a hold on 'em. I'm a-goin' to sue 'em fur damages."

"Shucks," sez I, "what do you mean woman, sue 'em fur damages? What has them bean growers done to you?"

"Look here," she sez, openin' her mouth. "See that back tooth with the new gold cap on it? That cost me $10 and about $990 wuth of pain. I busted a piece outen it tryin' to chew them pinto beans you brot me from the store last week. My tooth struck a rock. You tell them farmers that's organized the association they better git busy and clean their beans. When I want gravel I'll git it from the crickbed. I don't like to take my grit in my cookin'; besides I don't need no grit. I ain't no chicken."

"So you ain t," sez I.

"Smarty!" she sez, turnin' her back and struttin' out to the kitchen. That woman sure kin strut!

I reckon she's about right in gittin' after us farmers about cleanin' the beans. We cain't expect to make much headway with a Bean Eaters club till the growers takes out the stalks, pods, pebbles and real estate and puts their beans on the market nice and clean. Dirt weighs heavy, but we cain't afford to haul it offen the farm in bean sacks; we need it to grow more beans in.

The growers was organized in a meetin' called by the government Bureau of Markets. I like the way them marketin' fellers goes after a proposition. That there man Bassett which was sent out from Washington to help Mr. Kerr, used to grow beans hisself in Michigan and he told us all about the Michigan association that saved the farmers about two million dollars the first year.

I thot we was goin' to be allowed to fix a price on our beans, but it seems not. Only the big trusts does them law violatin' things like makin' the same price on gasoline all over the country on the same day, and that's usually a coincidence which if the farmers ever tried it, would land 'em in jail.

Here's the way it's worked by the bean growers. They has a committee that gits in all the crop reports and the acreage and soforth from their own territory; that knows all about the crops in other states; that knows how much it's costin' the farmers to raise beans and takin' all that in consideration, and also the condition of substitute food crops, they sez, we think beans is worth so and so much per hundred or per bushel, now you growers sell 'om at just what you're a mind to. If you want to give 'em away, that's your lookout; if you think we are too low, git more fur 'em if you can. You see that ain't price fixin', but price finding, Mr. Bassett told 'em. He warned 'em about not runnin' contrary to the Sherman law. We all know what would happen if some little feller like a farmer would violate the Sherman law; thoy'd have him in jail so quick he couldn't begin to hire witnesses to build up his case.

The way it has been with beans is just like this. A feller comin' out from town drives up to a farmer and sez: "Good morning, got any beans to sell?"

"Yep, I got a few, such as they are."

"What do you want fur 'em?"

"What are they worth?"

"Well I got a wire from my house yesterday tellin' me the market was down ag'in to 3 cents. We was payin' 3½, but everybody is sellin' and they ain't no demand, so we got to put out our cash and hold the beans three or four months as a accommodation fur the farmer."

Well the farmer finally sells 'em, because he figgers that it'll be just so much cash, and even if he's bein' skinned a cent on the price the beans didn't cost him much to raise nohow.

Now with the association organized all that's goin' to be stopped. Every member is goin' to be kept posted on the price and the demand by Uncle Sam's marketin' bulletins, and when Mister Buyer comes up to the door in his Ford the grower kin show him a little message that just come over the long distance from headquarters of the association, sayin': "Beans—receipts 6 cars. Market steady to strong; choice pintos 6½@7c; No. 1 pintos 6c; No. 2 pintos, 5½c."

He won't even ask the buyer to come in the house and the buyer will have his hat off and say: "Couldn't let me have about 3,000 lbs. choice pintos today, could you?"

"Well I reckon you kin have a few, but not that many. I'm goin' to hold most of my beans, because I don't need the money right now."

"Thank you," sez the buyer, "I'll be glad to take what you kin spare me, at the regular quotations, if they're choice or No. 1s."

That's about the way it'll work out, but before we kin expect this the grower has got to learn to grade 'em, and he's got to start before that and select his seed and git beans that'll answer to the name of pinto. He's got to quit raisin' them there rainbow beans which has all the colors of Joseph's coat. Then the next thing to do is fur the town people to git behind the farmers and learn to call fur pintos at the store. As long as our own people buys eastern beans put up in cans the farmers cain't hope to git the eastern people to buy their pintos at the same figgers that is paid fur white beans. We got to make our own cannin' tests. Them eastern canners ain't goin' to admit that our beans is just as good fur puttin' up in tins till they has to. We kin put up cannin' plants out here and keep this trade at home. Let's all be patriotic; buy a Liberty bond and eat more pinto beans.

THOMAS JEFFERSON PUTNAM.

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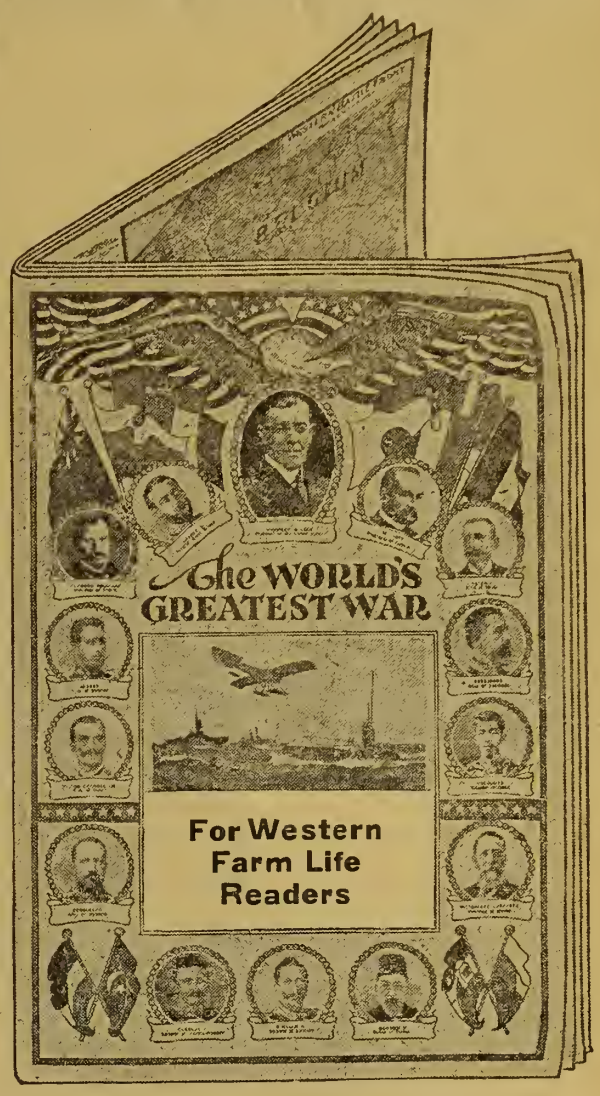
Western Farm Life

Denver, Colorado



Field Peas and Oats Excellent for Ensilage

(Continued from page 5)

of the crops mentioned did not have the appearance of a good feed. Chemically it was found that the silage made from straight alfalfa contained no acetic acid, a common constituent of corn silage and most other silages, but was comparatively heavy in proprionic and butyric acid. The cows at first did not take to the clover, alfalfa or pea silage but later ate it well and the milk flow was successfully maintained. The mixture of straw with the legumes, done with the idea of furnishing cheap carbohydrate material to aid fermentation, was not entirely successful.

In the larger silos mentioned there was preserved for use in the various herds of the university a total of over 300 tons of silage which has all been fed at the present writing with the exception of possibly thirty tons. In the large silo constructed for the use of the dairy department there was siloed the university corn crop. In the other silos were the following: Peas and oats, peas and wheat, wheat and vetch and wheat alone. On account of lack of accommodations for dividing the herds no detailed comparative tests were made. The above-mentioned silages, however, were sampled for chemical tests; observations were made as to odors developed and keeping quality of the various mixtures and all were fed to livestock and note made as to palatability and general results from actual feeding.

The wheat and vetch, peas and oats, peas and wheat and wheat alone were fed to beef cattle; some peas and oats and peas and wheat were fed to horses and the university flock of sheep ate twenty tons of peas and oats silage. For two years in succession the large pure-bred herd of beef cattle has been fed largely on peas and oats silage and the general results have been entirely satisfactory. Peas and oats is a cheap silage crop to grow, can except on heavier land, be harvested with a binder and the sheaves fed into the cutter, has a color and flavor similar to corn silage and as indicated has been fed at the University of Idaho with entire satisfaction to beef cattle, sheep and horses. So far it is the most satisfactory mixture that has been developed here as a substitute for corn.

Peas and Wheat Siloed

Peas and wheat was used for the first time in 1917. The flavor developed and the keeping qualities are similar to results from peas and oats and this mixture bids fair to rival the peas and oats as a silage mixture for regions where corn is not a good yielding and reliable crop. Vetch and wheat has been used on small acreages for two years and has been found quite satisfactory to grow and excellent as a feed. It may later be found to rank slightly below peas and oats and vetch wheat as a crop for many regions in the northwest, but in some sections by fall seeding of wheat and vetch very large yields have been secured and in a quantitative way especially the crop found highly successful.

The making of silage from crops other than corn is a demonstrated success for the northwest and silage of some of the kinds mentioned above has been found at the university to give results fully equal to corn silage when fed to various kinds of livestock.

Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and thru the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Action For Damages

A buys a relinquishment of 160 acres, accepts the land as containing full 160 acres. A's north line is next to the section line. A makes final proof and is satisfied with all, after surveying it. B files on 160 acres joining A on the south, holds it several years, then makes entry to prove up, decides the land is several acres short of the 160. B sets fence in on A to get the required number of acres after having the place surveyed. What redress has A, if any?—G. W. H., New Mexico.

A can bring an action to recover that portion of the land wrongfully taken in by B, and also damages for loss of crops, etc.—Peters & Barker, Attorneys, Equitable Bldg., Denver, Colo.

Note to G. W. H.—See article in this issue on Contagious Abortion in answer to your question: "What can be done for cows that do not clean at calving time?"

Wingless Grasshoppers

Under separate cover I am forwarding in a small box an insect. I would greatly appreciate it if you will tell me what it is, what it feeds on and something to rid house and cellar of same. It is becoming very much of a pest. It gets in all kinds of food, clothing and even the bed. We first noticed it last summer. Will it eat clothes?—J. R. N., Durango, Colo.

This is one of several similar insects commonly spoken of as "crickets," but they are really wingless grasshoppers. They have the habit of feeding upon vegetable matter and living in dark, damp places. It is quite common for them to be in cellars, but they are more often found beneath the stones or boards or other bits of wood lying upon the ground. For the most part, they remain out of sight during the daytime and venture out to feed during the twilight. These insects never become specially injurious, so far as I know, in this country. I think all you will need to do will be to kill them whenever you see them. They do not bite people, and are not poisonous.—C. P. Gillette, State Entomologist.

Potatoes in Pueblo

We have been told not to plant potatoes here at Pueblo—that they will produce no tubers, but all go to tops. Is is true, and if so, how is it accounted for?—J. O. C., Pueblo, Colo.

An open porous soil is required for growing potatoes. They will grow in many kinds of soil and to say that it is impossible to get tubers in Pueblo is perhaps too broad a statement. The writer is not personally familiar with soils in and about your city, but presuming that adobe is the most common of your soils, it will be found difficult to get good potato crops. The ideal potato soil is a sandy loam. In order to grow potatoes successfully in tight or heavy soils it is necessary to change their physical condition by applying barnyard manure, or plowing under green fertilizing crops. This may be done for small patches, but the results are usually not worth the effort and expense when an attempt is made to handle such soils for field planting. All of our successful potato districts possess soils naturally adapted to the development of the tuber, and this means soils that are well drained and allow good aeration. However, the physical condition of the soil is not the only requirement. There are many soils physically fit for potato production which do not have the chemical elements, or the plant food necessary to produce potatoes in profitable quantity. This lack is usually supplied in the potato growing districts by a rotation with alfalfa, this crop being grown on potato ground for several years, thereby storing nitrogen in the soil while at the same time the alfalfa root system is keeping the soil in an open, porous condition. The last cutting of alfalfa the third season is plowed under green and the following season potatoes are planted, with yields running all the way from 300 to 500 bushels per acre. For the family garden where ordinary yields are all that is required, deep spading of the ground and fertilizing heavily with well rotted manure is the safe system to follow, always providing your soil is such that it does not run together and bake hard under the influence of the summer sun.

Navel Infection

We have a calf dropped December, 1916, and about six weeks ago she got lame in a night, probably wrenched from being kept in too crowded a pen. She developed a large swelling on joint close to flank and dragged her leg. Lately it broke and we squeezed out large quantity of matter. It fills again and does not heal. Will you please tell me what to do for it?—B. E., Plainview, Colo.

The inflammation and suppuration of the joint is probably not caused by injury but rather by infection through the navel immediately after birth. The disease known as navel ill in colts is caused in this way and the owner is very liable to say that the mare stepped on the colt and caused inflammation of the hock or stifle joint. The colt will be very sure to die. The same thing frequently happens with calves, altho the latter will be more liable to develop white scours. If it is an open joint from injury, the case will be equally serious. Should it be merely a superficial abscess, see to it that there is good drainage and by this time it will require no further attention. It will be worth while to keep a good disinfectant on hand, like one per cent potassium permanganate, and disinfect the navels of all new-born animals. It will only take a few minutes to do it in each case and it will pay.—G. H. Glover.

Vaccinate At Once

Will you please tell me how old a calf should be before it should be vaccinated? Is there any danger of a calf getting the "blackleg" under six months old?—R. H. S., Golden, Colo.

It is never too early to vaccinate a calf for blackleg. The disease is apt to attack a calf of any age up to 18 months.

Disinfect the Barn

I have a bull that rubs a great deal of his time. I have dipped him in creosote dip twice and he continues to rub. What can I do for him? He is in good shape and in perfect health, eats everything I give him.—C. L. M., La Veta, Colo.

Your bull may be suffering from lice for which a creosote dip is an effective cure. You say you have applied this twice. Perhaps your barn is infested with lice and needs cleaning and disinfecting. Keep the stalls whitewashed or spray with an antiseptic wash to prevent further infection. Sometimes ring worm, otherwise known as barn itch, causes trouble for cattle. If your bull has this trouble you will see scales or patches of skin where he rubs the hair off. If he has rubbed the hair off and any such scaly places are visible they should be washed clean and sulphur ointment applied once a day to the affected part until it heals. Cleaning and disinfection of the barn is necessary to prevent further trouble. Ringworm often disappears without any treatment, but its presence indicates the necessity for more sanitary barns and stalls.

For Poisoning Grasshoppers

Last summer you published a recipe for destroying grasshoppers. I have lost the paper it was in. Please publish it again, as the hoppers are here.—N. M. W., N. Mex.

The following two formulas have been used to good advantage. You can use which one you like:

(1) The following poison bran mashes have been found quite effective in destroying grasshoppers in orchards and vineyards, and army worms and cutworms when abundant:

White arsenic or Paris Green	1 pound
Bran	20 pounds
Syrup	2 quarts

(2) This formula has been found successful:

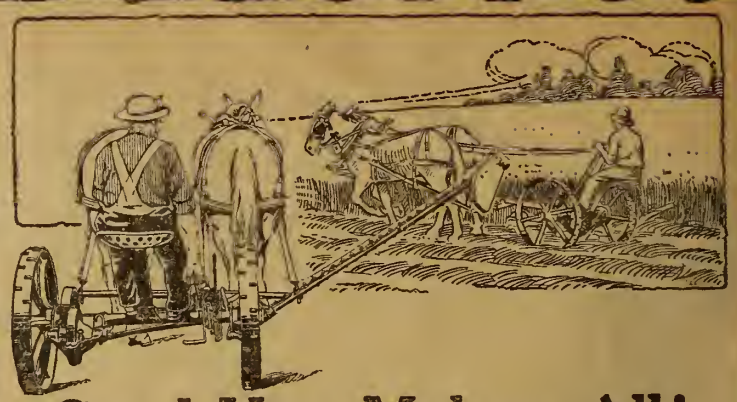
Paris Green	3 pounds
Bran	50 pounds
Syrup (cheap)	4 quarts
Water	5 gallons
Lemons	ten

Mix the Paris Green and bran together while dry; dissolve the syrup in the water; squeeze the lemons into this and finely chop the peel and pulp and add them also; pour this mixture into the bran and Paris Green, and stir so as to dampen the mash thoroly. The lemons may be prepared by putting them thru a meat grinder. Distribute the mixture broadcast in as fine particles as possible where the grasshoppers are most abundant. The application should be made towards evening or early (between 4 and 7 o'clock) in the morning. From 3 to 5 pounds of dry bran is usually sufficient for an acre of land. Never distribute in little piles. For army worms, distribute more freely, just ahead of the line of march.

Cut By Rope

I have a mare, six years old, some time ago she cut her foot under the fetlock with a rope. Her leg swelled up to her stifle, but the swelling has gone down to the hock joint. When she stands in the stable it swells more. Is there anything to be done to take down the swelling?—J. E. C., Utah.

I would suggest that about the only treatment that you could give is cold water bathing and hand rubbing. Do not let her stand in the stall any more than is absolutely necessary.



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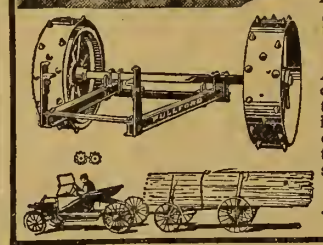

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Dairying and Hog Raising

GEO. E. MORTON

Free advice on the commercial or technical features of dairy farming and hog production. Please address your letters to DAIRY DEPARTMENT, WESTERN FARM LIFE, DENVER, COLO.

An Italian company of New York ty is investigating Colorado as a field r development of the cheese industy, the cheese to be made from owe's ilk.

Butterfat has taken a slight jump, ie, it is claimed to speculation by e food gamblers who were forced it of the wheat pit.

The Colorado Milk Producers' Asso-ation has done good work in secur-g a higher price for wholesale milk the Denver market. If the associ-ion will work with other agencies terested in benefitting the dairy in-stry, it has a legitimate field and a od future before it. If it takes the titude that it is the only organization orthy of existence, and its way the ly right way, and all other dairy encies must be nullified or de-royed, it will have a brief boom and en die out. Every dairy agency there should work with every other dairy ency for the development of dairying d the aid of dairymen.

Mr. V. R. Tucker, county agent of uglas county, Colorado, is organizing cow testing association to help in eeding out the boarder cows. Mr. evius of the State Dairy Commission s been helping him with the project. looks as though at least 600 cows ll be entered in the association.

Some people of the locality are xious to form an organization to hire tester to check test milk and cream hich they sell, in order to guard ainst undertesting by the purchaser. e Dairy Commission is check testing re and there, as complaint arises, d cases are being filed against firms at are returning a fraudulent test. shippers association man, however, uld check much more frequently as would spend all his time testing e milk and cream from one locality. local man working in this way ould be employed by a local shippers sociation in the same way that fruit spectors are employed by local fruit sociations. There is a good field r such work, and we hope that Doug-s county people will go through with

The city of Durango, Colorado, has just had its milk supply inspected by Mr. Darrow of the State Dairy Commission. The bulk of the supply proved to be very high class. Only one dairy was below standard and a case has been filed in court against the owner.

Starting With Cows

I have been farming in this county for four years. In 1914 and '15 I got good wheat crops and raised corn enough to sell to my neighbors, but last year was pretty dry and I didn't do so well. I don't think grain raising pays in this country, so I'm going to try milking. Most of my neighbors sell cream and they raise plenty of feed for their cows, but don't seem to do much with them in winter except to feed them. They get their milk in summer from grass, as we have lots of idle pasture land around here yet. Can you give me some instruction on how to start in with cows? The farmers around here nearly all have just range cows, and they say it don't pay to get regular dairy stock because they won't rustle their feed. I was raised in Iowa, where we were used to a good grade of cows on the farm and I expect to have good ones and feed them so they will pay me in milk. What breed do you think will do best out here on the prairie, where they are on pasture from about the middle of May on? I noticed last summer the grass dried up about July 1st and we didn't have any more pasture till September after it rained and then only for a month. The neighbors say it don't always dry up in summer, but I don't remember whether it did the other years I have been here. Tell me all you can about how to get a start, what kind of feed to raise and what good cows will cost me. How many ought I to have on the start? I have my boy, age 15, to help me milk. Do you think the milking Shorthorn is good for my purpose?—G. F. K., Arapahoe county.

If you are reasonably sure to have range grass near for some years to come, the Milking Shorthorn will do well for you as you can turn the steer calves on free range, and whatever beef they produce over the cost of winter feed is clear gain. The Milking Shorthorn does not give as much milk as specialized dairy cows, and you must expect to make up for this by beef production. Good Milking Shorthorns are scarce and hard to get here as anywhere, but when gotten they are paying animals.

Of the special dairy breeds, the Jersey will do best on grass in the summer without grain feed in addition. The Guernsey or Ayrshire will do just as well, but stock is scarcer. The Holstein will give good returns if you feed her grain or grass, but she is larger bodied, eats more, and so must travel further for her feed.

Your choice should lie, probably, between Milking Shorthorns, Jersey and Holstein, the one you want depending upon how you want to handle your cattle.

Don't be afraid of well-bred dairy-cattle because they won't live on air. You can put down some pit silos at a very small cost and store feed both for winter and for the dry summer months. With good corn fodder and millet, and corn silage, you can buy a little cotton cake, feeding two or three pounds a day of it, have your cows come fresh in the fall and get far more out of a cow than your neighbors are doing. Jersey grades will cost $75 to $110; Holsteins, $90 to $150; Shorthorns, $95 to $100.

How to Get Cows

I am very anxious to learn all about the terms and prices of the dairy cows that are being distributed in Colorado thru your co-operative county agents. Please give me full details in regard to them. I am very anxious to get more cows, as I only have one, so please advise me in regard to the matter and oblige.—M. A. S., Holly, Colo.

The method of obtaining cows carried out by the county agents and the Dairy Commission is for the farmers desiring cows to arrange loans with their local bank, the money being placed to the credit of some local man who is chosen by the buyers to represent them. The Dairy Commission furnishes a man experienced in locating cows and expert in estimating their value. These two men then go east to some dairy center and gather the cows for shipment. Mr. McCann is now in Wisconsin helping buy five carloads. Stock is getting scarce and prices are climbing. He reports that two-year-olds are pretty well cleaned up and yearlings are the best buy at $60 to $80. Two-year-olds are $80 to $125. These prices are on Holstein grades which he is locating for County Agent Chas. Smith of Las Animas county. If only a few cows are wanted in a community it is best to buy them locally.

Feeding the Pigs

We are raising hogs and most of the time have 400 to 500 thorobred Duroc Jerseys of all sizes on hand. The problem of feed for the young pigs is of interest to us, and we are thinking of putting in a small dairy of 15 to 20 good grade cows, separating the milk and selling the butterfat and feeding the milk to our young pigs. All information you can give us will be highly appreciated. First, as to the food value of skimmed milk compared with grain slops. Second, will it pay to feed the milk without separating to young pigs. We have abundance of alfalfa hay and pasture. We figure on keeping the cows corralled and feeding hay and garin. We have thot that by separating the milk that the sale of butterfat would pay the cows' feed and care, giving us the skimmed milk for the pigs and the increase of the herd as profit. Am I right? At present prices about what would 20 good grade Holstein cows and one thorobred bull cost?—G. M., Littleton.

It will not pay to feed whole milk to pigs. Skim milk is worth about 25c per cwt. with grain at $1.00, so now it is worth about 75c per cwt. This value is assigned it when fed in proper proportions with grain about one part skim milk to three parts grain. You are right in figuring that the butterfat should pay the cost of keep of the cows, and with the manure should also pay for labor. See prices of Holstein grades in Wisconsin in another letter in this issue. The prices quoted were obtained only after considerable hunting. Stuff can be bought cheaper but it is not well grown or thrifty. Good Holstein grades of mature age bought locally will cost you probably $125 per head. A good registered yearling bull out of an advanced registry dam, $125 to $300.

Mangels For Dairy Cows

Answer to W. G. B.:

Mangels give a very large return per acre. Ton for ton they are not as valuable for feed as sugar beets or stock carrots. They are easily grown and harvested, however, which is a distinct advantage. They freeze in the fall more readily than sugar beets, so must be harvested early. Freezing will cause them to spoil. The Long Red Mangel is as good a variety as you can use. On good irrigated land in your section you should get twenty-five tons to the acre and you may feed forty or fifty pounds per thousand pounds live weight, either to sheep or cows.

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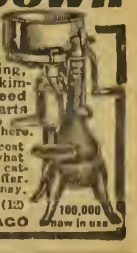

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The Farm Home

MRS. H. T. FRENCH

Questions about home problems promptly answered by letter and thru the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

Much time is wasted in lamenting the evil condition of the world, but the world is not made better by such lamentation. Consider the brightness and the joy of living. When we consider things as they really are there is every reason to be happy, to be joyful. — Charles Brodie Patterson.

The Patriotic Housekeeper and Home-maker has, a few times at least, been tempted to hold up her hands in despair as she faced the present crisis in family life and tried to answer the current question, "What is the part I am to take in solving this great economic problem of keeping the family well nourished, well clothed and happy?"

We read so much concerning food values and the progressive and inquisitively-minded housekeeper is anxious to know what simple principles govern the proper selection and combination of foods.

What do we mean by well balanced meals? Before we can answer that question let us for a moment consider what food is and what are the various classes of foods. A very plain definition of food is that material which, taken into the body, builds up and repairs the wear and tear caused by activity, and fuel to burn, making activity possible by the transformation of heat into energy or power to do work.

The classes of foods are protein, fats, carbohydrates, mineral matter and water. Now, readers, let us not be fearful of these few simple terms. Science, that we talk about, only means classified knowledge, and a little science will help us to better appreciate the simple helps that are ours for the asking and are often discovered at our very doors.

Water serves to dissolve the food and carry it in solution to every part of the body. It is also used by the skin to regulate the temperature of the body but it does not build up tissue or supply heat or energy. In fact water is not, truly speaking, a food, and if we are careful to supply enough water for the body to take care of all its functions we need give it no further thought.

Mineral matters have also been supplied by nature in her cereals, fruits and vegetables which are rich in mineral salts and in health; the minerals will take care of themselves if the diet is sufficiently varied.

It is then the proteins, carbohydrates and fats that we must familiarize ourselves with if we would plan our meals more intelligently. Protein is a repairing material and is found in meat, eggs, cheese, nuts, etc., and two groups, namely, carbohydrates (starches and sugars) and fats furnish fuel for our activities.

A properly balanced meal must therefore furnish protein, (building material) and carbohydrates and fats, (fuel material).

All three classes supply heat and energy; but we should remember that when carbohydrates and fats are used as fuel they are changed into water and carbon dioxide, which are easily taken care of by the body; but when protein is used for heat and energy there is a nitrogenous product left which, like the ashes in the stove, must be eliminated by special work. If a person takes sufficient outdoor exercise he can easily take care of these nitrogenous waste substances.

We read in all directions concerning balanced ration; that we should seek to use just enough and no more of such protein foods as meats, and thus lessen the cost while maintaining health. The meats cost more than any other class of food and if we can reduce the amount eaten and at the same time produce a more healthful diet, we can in this way reduce the cost of living.

Now, we might compare the carbohydrates and fats, which supply energy to the human machine, to the gasoline in the tank of the automobile engine. The more work to be done the more fuel will be needed. The man who digs ditches will need more food than the man who drives a cultivator.

As hard work does not wear out the muscles, hard working men do not, as is often supposed, require more protein food. Hard exercise does require fuel food and if not enough carbohydrates and fats are supplied, the protein of the body itself might be used for fuel to supply the energy needed.

One important thing then to remember is that the amount of protein needed from day to day remains about the same; the amount of carbohydrates and fats varies with the work done by the body.

By doing just a little of our own thinking and using good housewifely sense, we shall meet this duty of planning and preparing meals with a very great degree of satisfaction.

Leota and Her Pet Cat

In this little corner reserved for the farm children, we have with us today little Leota Hannibal, daughter of Mr. and Mrs. Sankey Hannibal of Potter, Neb. Leota has had her picture taken with her pet Angora cat. She has a big, fine dog, too, and the two pets like Leota so well that they never quarrel, but live together peaceably, just like a family should.

Our Exchange

How very glad we are that our Inquiry Column has brought us so many messages of cheer and goodwill that many times repay the labor of reply. One reader expresses a desire for a page in the Western Farm Life where the women may talk to each other in little friendly, helpful letters—and may we say that the object of the Home Column is that the farm women may join hands in this splendid work of enriching home life, and all suggestions for a better home page will be gladly welcomed.

Question—Please tell how to dry peas.

Answer—When the peas have reached full size but are still green and have a good flavor, shell and pick over, spread very thinly on mosquito netting laid on wire screen, raised a few inches from the table. Place a covering of mosquito netting over the peas and dry in an airy room. In less than a week they will be dry enough to rattle. As a further precaution against storing for winter, with any moisture left in or on them, put them in dishes and keep them in warm, dry closet for some time before storing. Make sure of a free circulation of air while drying, so as to prevent the possibility of molding, and keep away flies and other insects.

The editor once read of a very unique way of preserving peas for winter use. It was as follows: Shell and put into a wide-mouthed bottle. Shake well to make as compact as possible, then cork closely and seal. Bury in the driest part of garden and dig up as wanted.

Question—How may I clean and whiten a last season's white hat the shape of which is as good as new, but that has been sunburned and yellow?

Answer—A leghorn hat may be freshened by rubbing in a paste made of 1 cup of corn meal and benzine. Brush off when dry.

White straws may be cleaned by washing with a damp cloth wet in citric acid solution, or lemon juice may be used. The hats may be bleached by sulphur fumes. The glaze can be restored by applying the white of an egg to it with a brush.

White hats that are too discolored may be transformed by useing liquid shoe blacking. Two or three coats should be applied. This depends upon the texture of the straw.

Summer Sewing for the Children

This is the time of year when the mother who has small children to dress is busy in selecting materials for little dresses and suits, and eagerly watching the fashion magazines for pretty ways to make them.

A long experience has taught me that there are but four really satisfactory materials for the small boy's suits. These are, first, serge—not dress serge, but the kind tailors use. A good piece of navy blue serge, fifty-four inches wide, will cost two dollars a yard. It should be well sponged, of course, before being cut, and if made in the plain Russian style it can visit the washtub, if necessary, and it will outwear anything. I know corduroy is recommended, but I have tried all grades and always find that the nap very quickly wears off and the suit will look shabby when a serge is like new.

The second material is of linen. This material should be thoroly shrunk before it is cut, and then cut large, with deep hems on blouse, sleeves and bloomers, as it shrinks more than anything. Either in white, linen color or shades of blue, linen is always good.

(Continued on page 15)

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2102—A Comfortable Dress for Mother's Girl. Cut in sizes 4, 6, 8 and 10 years. Requires 3 yards 44-inch material for 6-year size. This style is easy to develop and nice for any of the materials now in vogue. The front closing is practical, and makes the garment easy to adjust. The sleeves may be in wrist length, with a band cuff, or finished in short length, with the cuff in "turnback" style.

2099—Favorite Play Dress. Cut in sizes 2, 4, 6 and 8 years. Requires 1⅞ yards 27-inch material for 6-year size. How simple, easy and comfortable; how quickly made in gingham, percale, drill, linen or chambray! There is the underarm seam, the back seam or closing (as you may prefer it), and the neck and shoulder finish—a simple hem, the belt stitched to position, and the dress is done.

2120—Simple Model for Home Wear. Cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Requires 6½ yards 36-inch material for 36-inch size. This is a popular and practical style, adapted to gingham, chambray, percale and other seasonable fabrics. The right front of the waist is shaped over the left.

2122—Pretty Style for Silk or Wash Fabrics. Cut in sizes 34, 36, 38, 40, 42 and 44 inches bust measure. Requires 8 yards 36-inch material for 36-inch size. This popular design is easy to develop and suitable for any of the pretty summer fabrics. Bordered goods could be used or embroidered flouncing. The tucks could be omitted. The sleeve is quaint in wrist length with the ruffled edge and smart in its bell shape.

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Profitable Farm Poultry

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Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries Poultry Department, Western Farm Life, Denver, Colorado.

We have tried hard to be scientific nd almost thought we were becoming , but the other day we received the ollowing letter from a reader of Westrn Farm Life which has plumb nocked all scientific pretensions out our head. This reader said: "I ish to submit for your consideration e attached clipping from the Scienfic American, regarding the use of preservative for eggs to be fed dictly to the hen and thru her to be eposited in the egg, which, thereon, will keep, presumably forever.

"I don't wish to appear impertinent, ut it seems to me if you devoted a ttle more of your time to scientific xperimentation and less to the dry, ractical side of the business we would et somewhere. I think our experiients should take the line of increasg the food value of the egg. Would not be possible by means of a scienfically balanced ration and forced eding to speed up the process of g making to a point where developent, in six to eight hours, within the n, shall give us a product that is arer akin to meat than the egg we w have? In other words, wouldn't be possible to produce shelled ham d egg, which, by cooking for two or ree minutes, would make a square eal? Of course you will say that e can get meat within the shell simy by the process of time and the plication of heat, but in this process course the egg becomes unfit for od. Perhaps this objection can be ercome by feeding a small quantity some harmless deodorizer with our g-meat making ration? At any rate seems to me that the experiment ould be worth trying. Nothing will er be accomplished if we simply sit ill and scoff at the efforts of the lentists."

Feeding Baby Ducks

Please let me know what kind of feed I must e to baby ducks? I don't know the first thing out them and I expect a hatching of them in a weeks. Will you please tell me how I can e them, also their feed.—Mrs. W. H., Maxll, N. M.

It is the custom of the large duck isers of the east to feed ducklings nd with the mash. Rolled oats and ead crumbs is a good feed for the st few days but is rather costly. If u can procure ground oats at the ill, sift out the hulls and use the heart the grain mixed with bran, middlings d corn meal about equal parts of ch, and you will have a good feed. hen sand is fed with the mash, about ree per cent is used. We have had ry little experience with ducks but efer to feed the mash on clean sand stead of in troughs and in this way ough grit is furnished. Milk, espeally sour or buttermilk, is a good feed ixed with the mash. After the ducklings are a week or two old, beef scraps n be fed in the mash, but with plenty milk and green stuff, the meat can omitted. Feed about five times a y.

Raising Chix

Mrs. Fred Davis, Limon, Colo., writes: A suggestion for chix. I could not ise chix without a brooder house with ova and plenty of light, and scratch material. Water fresh, grit in the morning; then fresh buttermilk, a sure preventive of bowel complaint. Keep buttermilk in brooder house till afternoon, as water used alone is best for night drink. A pan of hot sand covered over with flannels to go to bed on, to prevent piling. I raise every chick. They are always comfortable and well fed."

Blue Ointment Salve For Lice

A reader of Western Farm Life writes: "I have heard blue ointment very highly recommended as a lice killer on chickens. I had 100 incubator chicks, ten days old, as healthy as I ever saw, and twenty-five older ones just feathered out nicely, I used the ointment and every one died. Is that what killed them, do you think? If it is a good louse killer, is it safe to use only on grown fowls?"

Blue ointment salve is a preparation composed largely of mercury and large quantities used on fowls will prove fatal. It should never be used on newly hatched chicks and on larger chicks very, very sparingly. The amount used on grown fowls should never be larger than a small pea and when applied for lice should be rubbed on the skin under the fluff. For lice on chicks, lard or vaseline is as good a remedy as any lice preparation, but all greasy matter should always be used sparingly. The ointment was certainly responsible for the death of the chicks. Many people use coal oil on chicks, often with serious results.

Self-Faeder, built into the studding of the Poultry House. Convanient, cheap, and naver in the way.

A Million Hens Organized

The hens of California are combining forces to standardize their products and cut the cost of producing eggs. Last fall one million hens, mostly owned in one centrally located California county, were incorporated by State Market Commissioner Harris in order to deliver the product of these hens as a unit for the betterment of producers and consumers of poultry products.

The organization takes the name of the Poultry Producers of Central California, with a capital stock of $250,000. Stock is subscribed for by poultry producers on a basis of 1,000 hens for each share of stock of a par value of $10 a share.

Just over the Tehachapi mountains to the south another aggregation of hens almost twice as numerous are similarly being organized for the same purpose with a capital stock of $400 000. These three million hens signed up for the purpose of unionizing and standardizing their products will cut no small figure in the poultry products market of the Pacific coast trade. Not only this—there will be a distinct effect in holding the poultry-feed market at a reasonable level. So serious has become the manipulation of poultry-feed prices, poultrymen are beginning to find they must organize or go out of business.—F. W. Orr.

Waterglass Thickens

I would like to have some of the experts tell me why the solution of waterglass in which I have packed eggs gets thick like starch (cooked). I made my solution 9 pints water boiled and cooled, and 1 pint waterglass, and for two years it has soon formed a sediment which looks like cooked starch. Our druggist from whom I bought the solution cannot tell me whether or not this spoils it for use again, or why it does this. The first few years I used it it did not do this. The eggs keep all right, tho I think they are not quite so clear, perhaps, as they were the first few years I used it.—Mrs. L. A. N., La Jara, Colo.

Chemistry is not in my line, so I cannot give you a scientific explanation of the reason for waterglass thickening when in solution. I have found that when I seal my jars with waxed or greased paper completely excluding air, the water glass solution remains thin You may test this by putting up a few eggs in a fruit jar with a good cap. I have had no trouble with eggs keeping even when the solution became thick but it is very disagreeable to handle the eggs when the solution gets in that state.. I have also had better success in making a weaker solution, usually using fourteen parts of water to one of waterglass.

It has been my experience also that eggs put up at this season of the year rather than later are better, as eggs in early summer, especially in irrigated sections of the state, are inclined to become what is termed "grassy," the yolks becoming dark brown and spotted and the whites quite watery.

Hens Pull Feathers

I have 55 hens, about one-half are White Leghorns, others Rhode Island Reds, and four White Plymouth Rock roosters. About two months ago I noticed some of the hens pulling feathers from the roosters' necks and eating them, and in about two days their necks were bare. Then the hens ate from one another. caught every one and applied coal iol and melted lard in equal quantities. Found a few lice on them, but no mites. I saturate the roosts once a week with coal oil and keep house clean with lime under the roosts. After the greasing they stopped for a while but have commenced again. And now can't grease them for fear of the eggs not hatching. I washed one hen and the eggs good and only got one chicken from the setting. On a few of the R. I. Red hens they have eaten the feathers off the back around the oil sack. When I kill a chicken and throw the feathers out they will fight for them and eat the feathers greedily. I feed mostly wheat. Twice a week I cook the wheat with some cracklings and red peppers and once a week give cracked corn soaked in fresh buttermilk, with a pinch of salt added. They have lime, sand and crushed oyster shells all the time. Also hog entrails several times, and some rabbits. They laid well all winter. Since January 1 have gotten 1,894 eggs. Their combs are red and eyes bright, but so ragged and look terrible. If you can tell me what to do will be very thankful indeed. Also last year about one-fourth of the eggs I set would have a chicken form and about half developed and then the contents of eggs would turn black and at hatching time eggs be about half full and black as coal. Two hens this spring have hatched every egg, but one 7 out of 15 and rest were about half full and black.—Mrs. G. W. A., Goodpasture Colo.

You certainly have a serious vice started in your flock and I hardly know what to advise you to do except to furnish plenty of animal food to your fowls. It is probably difficult to get green cut bone, but in that case supply commercial beef scrap, as undoubtedly your hens are hungry for animal food. Should this plan break them of the habit of feather eating you could gradually cut down on the beef scrap, substituting milk, but probably a little later there will be enough insects and bugs to furnish them enough animal food. The hens probably acquired this habit from picking bloody feathers from the rooster's neck, and the only way known of succeeding in breaking up the habit is in isolating all those who are beginning to look ragged, following the above plan. You do not mention whether or not you keep your hens in small yards. It is seldom that hens on range acquire this habit.

As to the poor hatches you have been having, this may result from one of many causes and probably the vitality of the breeding stock is mostly to blame. Especially is this true in the case of hens confined to narrow quarters.

Should the trouble continue with your hens, we should like to have a little more complete details of the management of your poultry, for it is very hard at a distance to try to determine the cause of such trouble as you are having

The above regarding the pulling of feathers also answers the question of Mrs. A. H., Golden, Colo.

Better Methods Needed

"Better methods are more important than a larger acreage in bringing about an increase in production," advises E. R. Parsons. "On account of the draft, man power will be scarce; but horse or motor power is all that is needed for deeper plowing. One acre, properly plowed, will yield more than three which are scratched in the usual way."

To which might be added that weeds are responsible for enormous losses of moisture and plant food seriously affecting crop yields every season. After proper plowing comes cultivation and then more cultivation. Every weed allowed to stand is an enemy of the nation. Swat the weeds!

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Livestock

Preventive measures have been adopted by Colorado to stop losses from animal diseases and nip in the bud any outbreak of hog cholera or other contagion that might cause trouble for the stock industry. Ex-Governor Ammons, as head of the Farm Bureau of the Denver Civic and Commercial association, has secured joint action on the part of the state and federal governments, in the appointment of a committee of leading veterinary scientists to handle the matter of animal disease prevention. This committee is composed of Dr. George H. Glover of Colorado Agricultural College; Dr. Charles G. Lamb, State Veterinarian, and Dr. W. E. Howe, representing the U. S. Bureau of Animal Industry.

Drs. Howe and Lamb can be reached at Denver and Dr. Glover at Fort Collins, by any farmer or stockman who may know of threatening conditions among stock that, if not acted on in time, might result in serious losses. Sanitary and quarantine measures will be in the hands of this committee, which is working in co-operation with Governor Gunter's War Council.

Losses from hog diseases, principally cholera, show an average of 48 per thousand animals in the United States as a whole. In some states the percentage ran as high as 100 per thousand last year. Colorado and other mountain states have been comparatively free from visitations of this kind and the effort will be made to keep them so.

Specialists in the U. S. Bureau of Animal Industry declare that the time for argument about anti-hog cholera serum is past. The serum treatment has proved the only effective means of prevention and sanitary precautions will stop the spread of the disease. The Colorado committee of veterinarians will co-operate with local authorities or individual farmers in any steps to minimize losses, not only of hogs, but of calves and other classes of stock.

Forage Crops Needed

An urgent call to farmers not to overlook forage crops was sent out recently by the Farm Bureau of the Denver Civic and Commercial Association, of which Ex-Governor Ammons is chairman. Attention was called to the fact that in the rush for greater food production, there was danger of neglecting proper support of the livestock industry by growing feed grains and roughage.

"The long winter just passed," says the statement, "has exhausted the supply of hay and other forage crops. Not only has the death rate among meat animals been unusually large, but those surviving are not in as thrifty condition as usual. In some localities the calf and lamb crops are very short. If we are to make any material increase in our meat animals extraordinary effort must be made to supply the feedstuffs necessary to produce growth. Greater demand than ever before will be made upon us to finish our livestock for market, and this can be accomplished only by the production of greater feed crops."

High Price For Fat Steers

All previous records for high prices for fat steers were broken here this morning when a bunch of 33 head of choice, well finished beeves sold to local packers at $12.75 per hundredweight. This is the highest price ever paid for fat steers on this market, the record prior to today being $12.35, established last week, and to Messrs. Peterson & Benson, prominent feeders of Loveland, Colo., belongs the honor of establishing this new top. The steers averaged 1,274 pounds each. This firm also had in 79 steers that averaged 1,141 pounds, and sold at $12.35, and 28 steers, weight 984 pounds, at $11. Messrs. Fred Peterson and S. E. Benson accompanied the shipment and were highly pleased with the price received and with the showing made by their cattle here. These steers have been on feed since Stock Show time and were finished on a ration of pulp, cotton seed cake and alfalfa. They made an exceptionally good gain and showed up well on the market.—Denver Record Stockman.

Buying Horses For the Army

The War Department authorizes the following:

The division of transportation of the Quartermaster-General's department announces that it will commence to purchase animals on June 15 next.

The army requires six classes of animals: Active horses from 950 to 1,200 pounds for cavalry; strong, active horses from 1,150 to 1,300 pounds for light artillery; powerful horses from 1,400 to 1,700 pounds for siege batteries; and draft mules, wheelers, above 1,150 pounds, and leaders, above 1,000 pounds, and those suitable for pack mules.

The department has established four purchasing zones: For the northwest, with a purchasing office at Fort Keogh, Mont.; the central states, purchasing office at 410 Scarritt Arcade building, Kansas City, Mo.; the south, with purchasing office at Fort Reno, Darlington, Okla.; and the east, with purchasing office at Fort Royal, Va.

The department will advertise the number of animals it requires, giving the specifications for each class and the price it will pay. The first call will be for animals for the new regiments of the regular army.—The Official Bulletin.

Colorado is included in the central zone, with purchasing offices at Kansas City; Idaho, Utah and Wyoming are in the northwest zone, headquarters at Fort Keogh, Mont., and New Mexico is attached to the southern zone, headquarters Darlington, Okla.

Veterinary Inquiries

Will you kindly tell me what to do for my 7-year-old mare? She had her second colt this spring about the 25th of April. She has never been used since and is not fit for use yet. Her trouble seems to be in her hind legs. She is lame in both hind legs and staggers when she walks. Eats good and is in fair condition.—M. L. R., Fondis, Colo.

Partial paralysis from injury at time of parturition is quite common and frequently results from breeding small mares to very large stallions. Notice if there is a discharge from the genitals which might indicate catarrh of the womb and would require special treatment. The paralysis which results from the severe strain in delivering a large colt is usually temporary. Take extra care of the mare and do not put her to work. Dram doses of powdered nux vomica mixed with the feed, three times a day for a few days, might help her.—G. H. G.

Calf Diphtheria

I would like to have your opinion as to what disease my calves have. They get a lump under their jaw when only a few weeks old, similar to lumpy jaw, but in a week or so they begin to breathe heavily, as if they had a growth in their nose or throat. They won't take feed and finally die. One died of this a few days ago. We were careful not to feed the other calves in the same bucket, but two more have the trouble now. There is no veterinarian near, so perhaps you can tell me what to do.—J. B., Kiowa, Colo.

You have described what is commonly known as "calf diphtheria." This is not true diphtheria and is not transmissible to the human. It is caused by the same germ (bacillus necrophorus) that causes the sore mouth condition of little pigs and "lip and leg" disease of sheep. The disease is infectious and contagious and must be handled in the same general way that diseases of this nature are controlled. Keep healthy calves away from the sick ones. Disinfect everything that the sick salves have come in contact with (see directions for disinfection in article on contagious abortion, this issue of Western Farm Life) and save the sick calves if possible. Look into the mouth of each calf and if you find a spot denuded of mucous membrane, or an ulcer, apply tincture of iodine with a swab. Wash out the mouth of each calf two or three times a day with a solution made by dissolving one-half teaspoonful of potassium permanganate in three quarts of boiled water.—G. H. Glover.

Pig Has Epilepsy

I have a pig about five or six months old. About a month ago it had a sick spell. It started to shake and kept it up for about a half minute and then fell down on its side. It went down on its hind feet first and then got up in about a minute and was as well as ever. About a month later it did the same thing and rolled its eyes, then got up and acted like blind.—W. E., Lindon, Colo.

Probably an epileptoid condition, much like puppies and kittens when they have fits. It is caused by worms, teething, indigestion and other digestive disturbances. Try one-half ounce of turpentine mixed with six ounces of raw linseed oil and repeat the dose in twelve hours.—G. H. G.

Colt Has Deformed Tongue

Can you tell me what to do for a colt foaled last week whose tongue seems to be deformed and hangs out of one side of its mouth? He sucks all right and is able to hold his tongue back out of sight for a little while at a time, but mostly has it out one side. Is all right otherwise, but am afraid this will bother later on. His tongue has a crook in it about two inches from end.—A. J. B., Mesita, Colo.

This is evidently a congenital deformity of the tongue, and if so is incurable. If there is a constriction of the tongue, amputation might be considered later.—G. H. G.

Use of Young Horse

I have a young stud horse that will be two years old the seventh day of July; weight twelve hundred pounds. Please advise me how many mares a week should he serve at this age.—J. S., Fremont Co., Colo.

Not over two a week, or sixteen to twenty for the season. A careful use at this age will do him no harm and some will argue that it will increase his procreative powers, but to strain him at that age would be serious.—G. H. G.

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C. F. BURKE, Rocky Ford, Colo

SEND YOUR FILMS TO US
Let us develop the photographs you take this summer. Best work guaranteed—any size film 10 cents. Printing 3 cents and up. Send for our catalog of photographic supplies.
HAANSTAD & McKEE
406 16th Street, Denver, Colorado

FROM FACTORY TO FARM

Two-Row Listing Cultivator	$50.85
One-Row Listing Cultivator	32.50
Three-Time Two-Row Listing Cult	47.50
Eight-Shovel Two-Row Cultivator	50.00
Twelve-Shovel Two-Row Cultivator	53.50

Write for our big Implement Circular
SWANSON PLOW CO.
St. Joseph, Mo.

THE FARM HOME

Continued from page 12

It washes well and stands hard wear. The other two materials are cheaper—galatea and chambray—but they are always satisfactory.

If the small boy wears with these suits a broad-brimmed hat of linen, a brown leather belt, and tan shoes and stockings, he is sure to be dressed becomingly, economically and practically.

Our little girl, however, is not so easily disposed of. If she is still in white dresses she will need a good many of them in the summer time, and it is a good plan to make them simply except one or two for very best. the country, if we are sensible, no "very best" will be needed, and it is wiser to make the little frocks of stout ginghams and linens in becoming colors, relieved with white trimmings, and other dresses for hot days, of the dainty dimities and lawns.

All colored materials should be soaked over night in a strong solution of salt and water to set the color and shrink the stuff. Little play aprons are made of seersucker, and bloomers of the same material worn under the apron save much washing of dainty little drawers and petticoats.

For older girls mohair is very serviceable for dresses and skirts, and the lovely plaid ginghams make very stylish frocks. The cotton chevlots and galateas are also useful.—Selected.

Some Suggestions

Here are some more suggestions for the patriotic housewife, to aid her in doing her part in conserving the national food supply. They were prepared by Miss Miriam M. Haynes, extension specialist in home economics, Colorado Agricultural College:

Use cheaper cuts of meat, cooking them thoroly and seasoning them carefully.

Use dried, salted and pickled meats and fish.

Use, in a variety of ways, meat substitutes such as cheese (commercial and home-made), nuts, beans, peas, milk, eggs.

Use milk in all forms, for it is a nourishing and cheap food. Don't scorn skim milk.

Use corn products in diet, such as cornmeal dishes, hominy, corn grits.

Use rice and starchy pastes (macaroni, noodles, etc.) as potato substitutes.

Use some dried fruits as desserts—peaches, apples, prunes, etc. Wash fruit thoroly, soak in cold water and cook fruit in that water.

Use carefully every bit of fat. Render out suet, chicken fat; save ham and bacon drippings for gravies, shortening, dressing, "greens," etc.

Use vegetables in the large variety of ways so well known to every housewife.

Plan meals carefully order wisely, store carefully, cook and serve food properly.

Meat Substitute

One and one-half cup bread crumbs, 2 eggs, ½ pint oysters (canned). Season and cover with milk. Bake 20 minutes in moderate oven. Delicious for supper dish with sandwiches and tea or coffee.

Those interested in reducing the meat bill may secure the following publications by writing to Editor and Chief of Division of Publications, U. S. Department of Agriculture, Washington. D. C.:

Farmers' Bulletin No. 391—Economical Use of Meat in the Home.

Farmers' Bulletin No. 526—Mutton and Its Value in the Diet.

Farmers' Bulletin No. 183 (Rev.)—Meat on the Farm; Butchering, Curing and Keeping.

Farmers' Bulletin No. 487—Cheese and Its Economical Uses in the Diet.

Farmers' Bulletin No. 128 (Rev.)—Eggs and Their Uses as Food.

Reducing the Meat Bill

Were it not necessary for us to consider the high cost of living, together with the ability to satisfy the sense of taste, the problem of furnishing nutritious foods would be lessened. Meats, to be most wholesome, must be both attractive to the eye and pleasing to the palate. It is not impossible to make many of the cheaper cuts tender by pounding them, or by cooking them in water to which a little vinegar has been added. Then forget that they are cheap cuts. It requires no small amount of patience and persistence in experimenting on the part of the cook to devise systems of cooking by which the so-called cheap cuts may be made almost as appetizing as dishes prepared from more expensive meats. We will buy beef rather than the inferior cuts of veal or mutton for similar uses. For soups the trimmings of mutton or veal are excellent, as is the end of the neck made into a stew. It has been the experience of the editor that cheap cuts of beef are more tender and tasty than those of lamb, mutton or veal, also that beef can be prepared in a greater variety of ways. For making stews and soups, however, as before stated, the choice of nutritious meats is by no means confined to beef. The housewife may provide any meat that is cheap and after using it as a foundation for soups, may easily separate it from the bone and gristle and in a dainty way serve it as the principal dish at the next day's dinner.

Increasing the Acreage of Food Crops

(Continued from page 3)

creek there is a coal outcrop that furnishes fuel for the family at the mere cost of hauling a few rods.

The family lives in a "dug-out," but it is a decidedly modern one, built of concrete, with shingle roof, equipped for installation of modern plumbing, a wide fireplace and mantel; in fact possessing all the conveniences of a city home. The object in building partly in the ground is to later use the lower floor for a basement, raise the roof and build another story on top of the present concrete work.

Farmers' and Stockmens' Exchange

Advertisements will be inserted in this department for 5c per word; four or more insertions, 4c a word each insertion. Remittances can be made by postoffice money order or personal check. Advertisements are set in uniform style, no display type or illustrations admitted under any circumstances. Every figure and initial counts as one word. Guaranteed circulation over 50,000 copies each issue. WESTERN FARM LIFE is issued semi-monthly the first and fifteenth of each month. Advertising copy for this department must reach us ten days before date of issue. It carries the most classified advertising because it gives you best results. Send us in a trial advertisement. Write for proof showing how these columns pay advertisers.

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WANTED—HEAR FROM OWNER GOOD FARM for sale. Cash price; description. D. F. Bush, Minneapolis, Minn.

FINE STOCK RANCH. ALSO IRRIGATED farms. Southeastern Colorado. C. L. Seeley, La Junta, Colo.

WANTED—TO HEAR FROM OWNER OF FARM or unimproved land for sale. O. K. Hawley, Baldwin, Wis.

GOOD LAND FOR SALE—LEASE OR ENTRY; Western Montrose county. Write F. B. Logan, Agent, Nucla, Colo.

HAVE SOME CASH BUYERS FOR SALABLE farms. Will deal with owners only. Give full description, location and cash price. James P. White, New Franklin, Mo.

FOR SALE, LIBERAL TERMS—10 ACRES Clark Colony, near Denver; good old water right, fair improvements. The La Veta State Bank, La Veta, Colo.

BUYERS, SEE THESE BARGAINS BEFORE you buy. Farms, businesses, any kind, anywhere; send for free magazine. Western Sales Agency, Minneapolis, Minn.

240 ACRES, WELL IMPROVED, 4½ MILES of county seat of Fulton County, Arkansas, to exchange for income property or farm in the West. Also other exchanges. Oaks-Realty Company, West Plains, Mo.

FOR SALE—10 ACRES, ALL BROKEN, GOOD 5-room house, good barn 18x32, other outbuildings, all fenced, 2 wells; sell cheap if taken at once; easy terms. Write Frank Milander, Edgewater, Colo., R. No. 1.

WESTERN SLOPE BARGAIN—$2,000 FOR 360 acres patented, 20 irrigated and cultivated, balance can be utilized, close to railroad, fine springs to water 1,000 head of stock; terms cash. De Lan & Co., Glenwood Springs, Colo.

HAY RANCH, COLORADO. 800 ACRES DEEDed land; cuts 550 tons hay. Adjacent to forest reserve. Good water rights; lake. Ideal hay and cattle ranch. Price $40. Terms. Address E. S. Bates, 1760 Penn., Denver, Colo.

FOR SALE—CHOICE 160 ACRES, PRICE $1.250; 320 acres improved, $3,200; 640 acres, spring water, price $6400; can give part time. If you are looking for a good home or investment, call or write Zickrick, Nunn, Weld Co. Colo.

IMPROVED QUARTER SECTION IN KIOWA Valley. Windmill, silo, 4-room house, barns 10 acres broken, 10 acres alfalfa, $35.00 per acre. $2,000 cash, balance easy terms. 6% Reynolds, Covey & Reynolds, 205 McPhee Bldg. Denver.

SOUTH CENTRAL TEXAS. MATAGORDA County, the rain belt, sure-crop county. No droughts. Can show now fine growing crops cotton, corn, luxuriant pastures. For land bargains address Magill Bros., Bay City, Texas. Live agents wanted.

A FARM OR RANCH FOR SALE. ONE OF the most desirable places in eastern New Mexico for a farm, or farm and ranch, is now on the market. This is an ideal place for a country home and can now be had at a bargain. For description and particulars address R. A. Barret, Montoya, N. M.

JUST RETURNED FROM SOUTH AMERICA—Arranged for million-acre grant; organizing cattle company. Want members join organization who are given 2,000 acres and stock in company for less than five cents an acre. Want sixty to seventy members to go to work on ranch. Highest reference. Box Q., Sawtelle, Calif.

360 ACRES, FARM AND STOCK FEEDING place, near R. R., school and church; nearly all cultivated; ample water rights; pasture with running water; 200 acres alfalfa; fine beet land; sheep pens fully equipped for 3,000 head; nice improvements; priced low at $75.00 per acre; no trades; easy terms. Fothergill & Atherton, Fort Collins, Colo.

$25.00 DOWN BUYS 105 ACRES OF WHEAT, 10 acres oats, and 320 acres good Montana wheat land. This farm is better than 80% tillable; 11 miles from town. 2 miles from school; is all fenced and has fair buildings and good well. This year's crop should more than make the first payment and liberal terms will be given on balance. For further particulars write Gilbert Gottfrey, Roundup, Mont.

GOVERNMENT LANDS

GOVERNMENT, STATE LAND—BARGAINS. Booklet free. Joseph Clark, Sacramento, Cal.

MONTANA HOMESTEADS—16,000,000 ACRES. 640 acres or 320 acres for you; circulars free. Homestead Bureau of Montana, Dept. 87, Box 845, Butte, Mont.

POULTRY

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

PLYMOUTH ROCKS

BARRED ROCK EGGS 100 $4.00. MRS. Alex Sheridan, Kanopolis, Kans.

WHITE ROCKS ONLY FOR 18 YEARS. EGGS $1.00 per 15. $5.00 per 100. Joalas Lambert Smith Center, Kans.

WHITE ROCK EGGS THAT HATCH—FROM my mammoth birds. They are bred white and right. Good winter layers. Eggs 15 $2.00; 50 $4.50; 100 $8.00. Mrs. Austin Elvin, Jefferson, Iowa.

LEGHORNS

THORO-BRED ROSE COMB BROWN LEGhorn eggs. $4.00 per 100. Mrs. J. T. Webber, Nemaha, Neb.

S. C. WHITE LEGHORN EGGS, YOUNG AND Barron strain. $1.50 for 15. $6.00 per 100. C. D. Hitchcock, Eldon, Okla.

S. C. BROWN LEGHORN BABY CHICKS $12.50 per hundred; beauty and utility strain; trapnested eggs also, $5.00 per hundred. Paradise Poultry Farm, Carona, Kan.

RHODE ISLAND REDS

ROSE COMB REDS—EGGS $5.00-100. CATHerine Recker, Dresden, Kan.

ROSE COMB BREEDING STOCK FOR SALE. Prize winning, heavy laying strain. Write your wants. E. A. Miller, Alma, Nebr.

HALL'S S. C. REDS AND WHITE ROCKS WIN again at the Great Denver Stock Show. Eggs, $1.50 per setting up. Mating list free. Stock for sale. Liston L. Hall, Gering, Neb.

SINGLE COMB RHODE ISLAND RED HATCHing eggs from deep, brilliant Red. Long back and low tail; $2.50 for 15 eggs and $1.50 per setting or $6.00 per 100 eggs. Mating list free. Nels W. Peterson, Mason City, Neb.

BRED-TO-LAY S. C. REDS—FINE, LARGE, hardy, hen-hatched, free range, heaviest winter layers; eggs, $1.00 setting; $2.50 fifty and $4.50 hundred, guaranteed. Belmont Farm, Topeka, Kans.

SIX GRAND PENS ROSE COMB REDS, MATED to roosters costing $15.00 to $50.00; 15 eggs, $2.50; 30 eggs, $4.00; 50 eggs, $6.00. Pure bred range flock, $5.00 per 100. Baby chicks. Send for catalog. W. R. Huston, Americus, Kans.

ORPINGTONS

PRIZE-WINNING SINGLE COMB BUFF ORPingtons; eggs, $1.25, 15; express prepaid. Carl Scherbacher, Guide Rock, Neb.

WHITE ORPINGTON EGGS FROM LARGE scored birds; $6.00 per 100, $1.50 setting. Otto Hampp, Beaver Crossing, Neb.

S. C. BUFF ORPINGTONS—EGGS $1-15; $3.50, $4.50-100. Fine winter layers. Blue ribbon stock. Mrs. Joe B. Sheridan, Carneiro, Kan.

IF YOU DON'T FIND ADVERTISED HERE what you want, write our classified advertising department and they will be glad to place you in correspondence with the right parties.

CEDARDELL POULTRY FARM—S. C. BUFF Orpingtons, exclusively bred for size, color and eggs. $1 per 16, $5 per 100. Martha Brown, Parkerville, Kan.

EGGS—$1.00, $2.00 AND $3.00 PER 15 THE rest of the season. F. M. Shank, La Junta, Colo., State Vice-President National S. C. Buff Orpington Club.

MINORCAS

S. C. W. MINORCA CHICKENS WANTED—pure-bred Colorado stock only. Mrs. W. W. Harper, Monte Vista, Colo.

LANGSHANS

GET MY FREE MATING LIST OF CHICAGO and Madison Square prize-winning Langshans. John Lovette, Mullinville, Kan.

CORNISH

QUALITY DARK CORNISH, THE IDEAL FARM fowl. W. W. Officer, Fowler, Colo.

QUALITY DARK CORNISH. R. H. JANDEBEUR, Alma, Nebr.

HOUDANS

HOUDANS—VIGOROUS, MAGNIFICENT BIRDS. W. D. Gay, Essex, Iowa.

DUCKS

ENGLISH PENCILED RUNNER DUCK EGGS, 15-$1.00. Joseph Kepple, Richmond, Kan.

ROYAL BLUE STRAIN RAUEN DUCKS, $1.75 each. Eggs in season. Jas. Cassell, Fremont, Neb.

FAWN WHITE RUNNERS; ELEVEN, 75c, POSTpaid in Colorado; 100, $4.00. Mrs. Baker, Arvada, Colo., Route 1.

SEVERAL VARIETIES

COLUMBIA HATCHERY—ALL LEADING VArieties of baby chicks, cockerels and hatching eggs. Reds, Rocks, Leghorns, Orpingtons, etc. Live delivery of baby chix guaranteed to your express office. We ship to all parts of Colorado Wyoming, New Mexico. Write for price list P. O. Box 1102, Denver.

LIVE STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

CATTLE

MILKING SHORTHORNS AND JERSEYS FOR sale. W. A. Wight, Las Animas, Colo.

FOR SALE—DOUBLE STANDARD POLLED and Horned Hereford bulls. Wallace Libbey, Maxwell, N. M.

HOLSTEIN CALVES—TWELVE HEIFERS AND two bulls, 15-16th pure four to six weeks old. $20 each, crated for shipment anywhere. Fernwood Farm, Wauwatosa, Wis.

FOR SALE—REGISTERED JERSEY HERD OF the St. Lambert and Hood Farm breeding. Largest in size and production. Will sell bull calves very cheap. Excelsior Dairy, O. S. Larson, Prop., Fort Morgan, Colo.

HEREFORDS—15 YEARLING BULLS AND about 30 bull calves, all registered, and of the best breeding and individuality. Among the yearlings are three herd headers, also one 4-year-old bull by Simoon. All at popular prices in order to sell. J. O. D. Ranch, Aroya, Colo.

REGISTERED JERSEYS AND MILKING SHORThorns. Jersey herd headed by Maggie's Shy Duke, 140084, Grand Champion Denver Stock Show. Two nearest dams average 54 lbs. milk per day. Shorthorns headed by Independence Lee 427351. Two grandams average 9023 lbs. milk in one year. The Hinman Silo Co., 1650 Champa st., Denver.

HOGS

REGISTERED, BIG TYPE DUROC JERSEY hogs for sale. Edgemoor Farm, Littleton, Colo. Caldwell Martin, Owner.

REGISTERED DUROC JERSEY BOARS AND gilts, sell at $15 and up according to age and quality. We are sold out on bred gilts, but can contract for gilts to be bred for later farrowing. Our sales at the Denver yards speak for the quality. J.O.D. Ranch, Aroya, Colo.

HORSES

NOBLE REX, 5-YEAR-OLD REGISTERED SADdle-bred stallion, 16 hands, black, 1,200 lbs. Grand individual, goes all five gaits; winner of stallion class at 1917 Denver Stock Show. By a son of the immortal Rex McDonald. J. O. D. Ranch, Aroya, Colo.

JACKS AND MULES

KIT CARSON, A BIG-BONED 7-YEAR-OLD jack, winner at Denver show, $500. Also a great yearling jack, promises to be bigger and better than his sire, and out of a jennet who took first at Denver also; price, $250. We have some excellent mules for sale; all ages and sizes. J. O. D. Ranch, Aroya, Colo.

HELP WANTED

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WANTED—POSITION, RANCH OR CATTLE foreman, any Western state, Southwest preferred; 15 years experience; 7 years with present employer; married; wish change of location; references exchanged; go at once. Address Box C "Western Farm Life."

MISCELLANEOUS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

SEND FOR FREE ILLUSTRATED BOOKLET ON photography, "The Kodak on the Farm." Haanstad & McKee, 406 16th St., Denver, Colo.

MAKE YOUR POULTRY BEAT THE HIGH cost of feed. Write for free treatise telling how. E. Grosser, 30 years' experience with poultry in the West, 2240 Perry, Denver.

YOU CAN MAKE A GOOD LIVING IN YOUR back yard raising rabbits for us. We will pay you from $1.00 to $2.00 each for youngsters. Breeders furnished at reasonable prices. Send dime for contracts and circulars. Thorson Rabbit Company, Aurora, Colo.

FARMERS AND STOCKMEN, IF TROUBLED with Loco Weed, you can kill it with our Loco-Killer without chopping or digging. Also want men to handle territory. If interested, write Western Mfg. & Trading Co., Box 673, Denver, Colo., Successors to Weisenhorn & Huck.

SEEDS

BLACK HILLS NON-IRRIGATED ALFALFA Seed, 20c per pound. N. A. Jensen, Farmingdale, S. D.

BEE SUPPLIES AND HONEY

BEE SUPPLIES OF BEST QUALITY. SEND for 68-page illustrated catalog. We also sell Comb and Extracted Honey. The Colorado Honey Producers' Association, Denver.

BUSINESS CHANCES

FREE FOR SIX MONTHS—MY SPECIAL OFfer to introduce my magazine, "Investing for Profit." It is worth $10 a copy to anyone who has not acquired sufficient money to provide necessities and comforts for self and loved ones. It shows how to become richer quickly and honestly. Investing for Profit is the only progressive financial journal and has the largest circulation in America. It shows how $100 grows to $2,200; write now and I'll send it six months free. H. L. Barber, 449-20 Jackson Blvd., Chicago.

IF YOU DON'T FIND ADVERTISED HERE what you want, write our classified advertising department and they will be glad to place you in correspondence with the right parties.

KODAKS

MAIL US YOUR KODAK FILMS; ROLL FILMS developed 10c. Printing, 3c and up. One-day service. No delays. Established 1905. The Mile High Photo Co., 322 17th St., Denver, Colo. Authorized agents Eastman Kodak Co.

KODAKS, CAMERAS, PHOTO SUPPLIES—Fords, the best kodak store, 1029 16th St., opp. old P. O., Denver, Colo., for Eastman Kodaks, all makes cameras, films, photo supplies; develop any size roll films, 10c; print pictures, 3c each and up; mail orders solicited; kodak and camera catalogue mailed free upon request. Mention this paper.

The Grange

C. W. SWAYZE, Editor

Officers

JOHN MORRIS, Golden, Colo., Master.
R. J. ALTIG, Boulder, Colo., Overseer.
C. W. SWAYZE, Stockyards Sta., Colo., Lecturer.
K. S. RHEA, Golden, Colo., Treasurer.
RUDOLPH JOHNSON, 1124 Logan St., Denver, Secretary.
A. H. KRAMER, Aurora, Colo., Business Agent.

The annual series of State Grange picnics in Colorado will be held during the week of July 9th to 14th, with a schedule arranged as follows:

Wray or vicinity, Yuma County—Monday, July 9.

Keota, Weld County—Tuesday, July 10.

Fort Collins, on College Campus—Wednesday, July 11.

Teller's Grove, Boulder County—Thursday, July 12.

Kiowa or vicinity, Elbert County—Friday, July 13.

Arvada, Jefferson County—Saturday, July 14.

At Glendale, Arapahoe County—Saturday evening, July 14.

The principal speaker at each of these picnics will be John C. Ketcham, master of the Michigan State Grange He will be accompanied by John Morris, master of the Colorado State Grange. Other speakers will be provided at each picnic of men prominent in public life.

At each of these picnics there will be basket dinners, band concerts, athletic contests, baseball games, Grange drill team exhibitions, races, and other attractions. During 1916 several Grange picnics were attended by over 2,000 people, and increased attendance is expected this year, as these affairs are becoming very popular among the farmers.

Other picnics not on this schedule will be held during the summer at Montrose, Durango, Holyoke, Eads, Ordway, Castle Rock, Roggen, and Bennett.

Notes From State Secretary Rudolph Johnson

Five Granges have recently been organized in Montezuma county in the extreme southwestern part of Colorado by F. W. Kroeger. One of these is called the Mesa Verde Grange, and is composed of ranchers living on the edge of the celebrated Mesa Verde National Park, which contains the ruins of the Cliff Dwellers.

Seven Granges have been organized since the first of the year in Baca county, the extreme southeastern county of Colorado, by J. W. Houlton. This is a plains region, and ranching is devoted almost entirely to cattle and sheep raising, with the growing of roughage for winter feed. Liberty Grange, in the corner section of northwest Morgan county, is making arrangements for the building of a Grange hall.

The largest Granges of Colorado are Wheat Ridge, with 211 members; Crescent, at Broomfield, 203 members; Clear Creek Valley, at Arvada, 191 members; Empire, near Fort Collins, 181 members; Harmony, at Elizabeth, 180 members; Elbert, 178 members; Columbine, at Littleton, 175 members; Loch Lomond, near Golden, 172 members; Pleasant View, near Boulder, 166 members, and Maple Grove, near Golden, 153 members. Of these Granges, seven own large, well-equipped Grange halls, costing $2,000 to $4,000.

The regular meeting of Boulder County Pomona Grange, which was to have been held at Altona on May 9, was postponed because of rain to Wednesday, June 13th. A good program was arranged by the Lecturer, Mrs Grace Leggett.

No busier man in the state can be found than Otis Scruggs, the purchasing agent of the Colorado State Grange, who is in charge of the newly established headquarters at 415 Charles building, Denver. He is continually answering letters and phone calls, and the string of Grangers coming and going reminds one of a country store on a Saturday afternoon. Since taking charge of the work Mr. Scruggs has handled over $30,000 worth of merchandise, from coal to clothing, and he has already saved several thousand dollars to the farmers who take advantage of this co-operative feature of the Grange work.

Homestead Grange, near Roggen, in Weld county, will give a picnic on the banks of Kiowa Creek, on July 4th. A band has been engaged for the day, baseball and other games arranged for. The address of the day will be delivered by Rudolph Johnson.

A. H. Kramer will deliver the address at a Grange picnic on July 4th at Oleson, in eastern Adams county.

The Granges of Colorado are playing an important part in the war council and preparedness movements over the state. It was found by the state and county officials that here were organizations of the leading citizens, capable and willing to take up the work of food supply, conservation of resources and of man power, and in general the work of preparing for a serious war.

At a regular meeting of the executive committee of the Colorado State Grange in Denver on Saturday, May 19, 1917, the following resolutions were adopted:

"In view of the present crisis in food supplies in the United States, the great need for immediate production, and the difficulties in obtaining suitable farm labor, be it

"Resolved, By the executive committee of the Colorado State Grange, representing some 12,000 members among 175 local Granges in the state, that we urge upon the national and state governments the exemption of farm boys and men from military service, and plead that they be left on the farms. These boys and men are experts in agricultural lines, and are as badly needed to provide food for the nation as are men to form the army and man the navy. Be it also

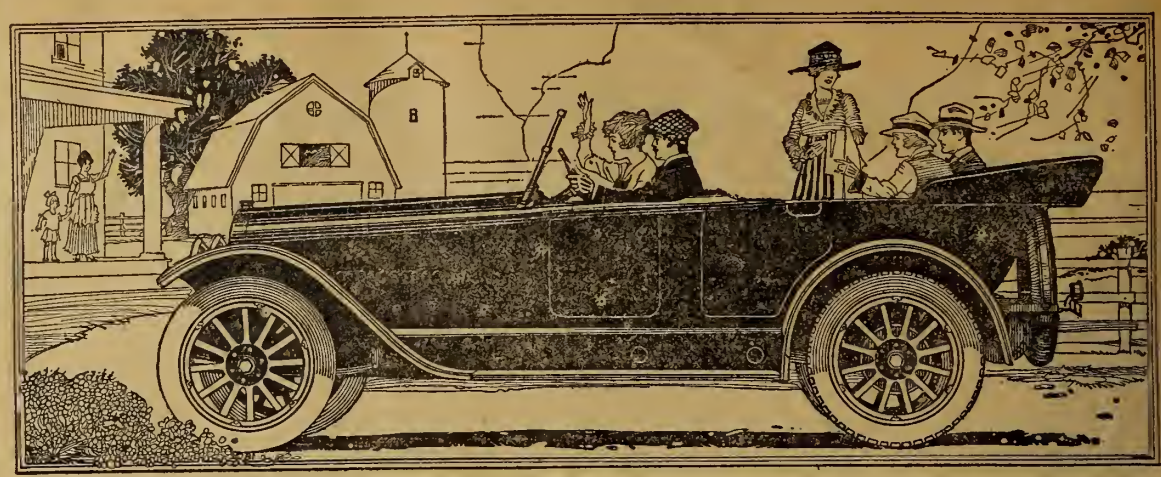
"Resolved, That we protest against the efforts being made by the military authorities to get the farmer boys to enlist, when they are so much needed on the farms. Be it

"Resolved, By the executive committee of the Colorado State Grange, representing the leading farmers' organization in the state, in view of the present crisis in food supplies and the great need for conservation, that we urge the United States government to prohibit the use of grains for the brewing and distilling of alcoholic liquors during the period of the war. Be it

"Resolved, That we send copies of these resolutions to the President of the United States, to the Governor of the State of Colorado, and to our congressmen and senators from Colorado at Washington.

(Signed)

"R. J. ALTIG, Boulder.
"J. F. GIRARDOT, Aurora.
"T. M. REYNOLDS, Montrose.
"JOHN MORRIS, Golden.
"RUDOLPH JOHNSON, Denver"



This Rugged Car
Has Twice the Needed Strength

John W. Bate, in the past three years, has doubled our margins of safety. Now every important part in Mitchells has 100 per cent over-strength.

This means better steel. It means larger parts. In these times it means much added cost. But it also means a lifetime car. It means a safe, economical car. A car which has proved that it can run 200,000 miles. That means 40 years of ordinary service.

Millions in Extras

There are also 31 features in Mitchells which nearly all cars omit. Things like a power tire pump, for instance.

There is 24 per cent greater luxury than in any other car in its class.

These extras will cost us on this year's output about $4,000,000. That is, for this over-strength, these extra features and this added beauty.

All Free to You

But all this added value costs you no extra price. Note that Mitchell prices, for either size, are below most fine-car prices.

We save in our factory cost. This mammoth plant has been built and equipped to produce this one type economically. John W. Bate, the efficiency expert, has cut our factory cost in two. Even the Mitchell bodies are built here, under these up-to-date methods.

That saving pays for these extras. We save all waste, and spend that saving on a superlative car.

Please see that car. See how it differs from other cars you know. Note its many unique attractions. You should know these things before you buy a car.

If you do not know the nearest Mitchell dealer, ask us for his name.

MITCHELL MOTORS COMPANY, Inc.
Racine, Wis., U. S. A.

Mitchell
—a roomy, 7-passenger Six, with 127-inch wheelbase and a highly developed 48-horsepower motor.
$1460
F. O. B. Racine

Mitchell SIXES

Mitchell Junior
—a 5-passenger Six on similar lines, with 120-inch wheelbase and a 40-horsepower motor. ¼-inch smaller bore.
$1195
F. O. B. Racine

Four-Passenger Roadster, $1495—Sedan, $2175—Cabriolet, $1895—Coupe, $1995—Also Town Car and Limousine.

Potato Quarantine Order

The first quarantine order under the new law forbidding the importation into Colorado of infected seed has been issued by Prof. C. P. Gillette, State Entomologist, against potatoes from California and Texas infested with the potato tuber moth. The order, which is effective June 20th, is as follows:

Owing to the presence of an important insect pest known as the Potato Tuber Moth (Phthorimaea operculella Zell.), on potatoes in certain sections of California and Texas, and believing that the potato industry of Colorado would be seriously endangered by the shipment of potatoes infested by this insect into our state,

Now therefore, I, C. P. Gillette State Entomologist of the State of Colorado, by virtue of the authority conferred upon me by law (Senate Bill 197, Schermerhorn, 1917), hereby establish a quarantine prohibiting the shipment into Colorado from California and Texas, or any source whatsoever, of all potatoes that are infested with the Potato Tuber Moth (Phthorimaea operculella Zell.), in any of its stages of development.

This order shall take effect on and after June 20 1917, and remain in full force and effect until further notice.

C. P. GILLETTE,
State Entomologist.

Muzzle the Blatherskites

My desk is piled high with a week's accumulation of dope. No other word fits it. Professional organizers have grasped the opportunity which war conditions afford to get for themselves jobs fitted to their peculiar and useless abilities. They are specializing now on farming and handing out words of what they think is wisdom, by the bale. In the anxiety to be of service, many publishers of daily newspapers, unable to distinguish the useful from the useless and misleading, are spreading this bunk broadcast. And it is accepted by the conversationalists in the cities and towns. They talk it over and find in it confirmation of their suspicions that farmers are a lot of loafing ignoramuses. Soon, since "everybody is talking about it," some farmers are misled and spend their time and money on things that fail. The irresponsible agricultural blatherskite is a real menace at this critical time. He should be muzzled.—**John Fields in Oklahoma Farmer.**

Western Farm Life

Vol. XIX Denver, Colorado, July 1, 1917 Semi-Monthly

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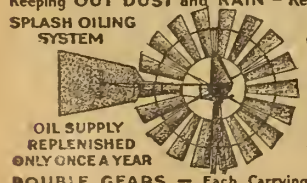

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Plants Do Not Carry Poison

A subscriber in Idaho sends us a clipping from a newspaper telling of the death of twenty-three horses, supposedly from eating wheat hay the heads of which carried poison scattered the previous season for killing squirrels. As the item has caused considerable fear among farmers regarding the use of poisoned grain for killing destructive animals, the article in question was submitted to Director C. P. Gillette of the Colorado State Experiment Station, to Dr. George H. Glover, head of the veterinary department of the college, as well as to Dean E. J. Iddings of the Idaho College of Agriculture.

Prof. Gillette says: "I wish to state most positively that the horses could not have been killed in this manner. If the poisoned wheat had grown it would not have produced poisoned grain. The horses died from some other cause."

Dr. Glover is equally emphatic in stating that the cause given for the death of the horses is "absurd and impossible." His reply is given in full, following the article, which is reproduced herewith:

W. A. Brown, who is in the city today from Crystal, reports that twenty-three head of fine horses were poisoned at one time and died within a few minutes at Crystal, from poison which was put out last summer to exterminate squirrels. The loss of these fine horses, some of which were used on the city streets of Pocatello last summer, will be a severe blow to the three Crystal men to whom they belonged, and at the same time has proved that poisoned wheat will grow and carry the poison up into the heads in such quantities as to cause the death of livestock—a fact that has heretofore been little known to ranchmen, and should cause them to be very careful in the future. The wheat was distributed last summer on a ranch near Mr. Brown's place, and grew up with other grain. It was harvested, and just recently given to the horses. In the feeding corral were thirteen head of fine horses belonging to Mr. Brown, and ten head belonging to his neighbors, four of them coming from the ranch where the poisoned wheat was sown. Mr. Brown, who threw the hay to the horses, states that some of the horses died within a few minutes after eating the hay, and when he went in among them to find out what was wrong, they were falling all around him like soldiers on a European battlefield.—Pocatello (Ida.) Tribune.

A copy of the article taken from the Pocatello Tribune is before me. The conclusions as to the cause of the death of these horses is based purely upon assumption, is unscientific, absurd and impossible. Strychnine and arsenic are the poisons used in this connection and neither one of them, even in large doses, will kill so quickly as to cause them to be "falling all around him, like soldiers on a European battlefield." There is only one poison available that would cause animals to die so quickly and that poison is prussic or hydrocyanic acid. Herein lies the only thing of interest in connection with the story from Idaho. Animals die occasionally from eating green cane, kafir corn, Johnson grass and the partially wilted leaves of the wild cherry, and they die as quickly as the horses in this instance are purported to have done. It is now known that the poison is prussic acid.

We have strong suspicion that plants other than those mentioned may under certain conditions cause death from prussic acid, which is liberated after the plants are eaten. All of the cases reported, however, have been in cattle and sheep and resulted from eating the foods above mentioned in a green state. That horses should die from eating wheat hay looks dubious, as far as prussic acid is concerned. Furthermore, it is known that plants can absorb only a trace of arsenic and the amount of this, or any other poison, in the plants that would kill horses would be sufficient to kill the plants themselves long before they would have time to mature.

The horses might possibly have died from prussic acid poisoning, but this is very doubtful. Possibly they died from eating too much wheat and that the statement as to suddenness of death is exaggerated.—G. H. Glover, Veterinary Department, Colorado Agricultural College.

Fish For Private Lake

Could you please tell me where I could get fish to stock a small private lake that covers about one acre? I would also like to ask what kind of fish to get?—W. W. W., Franktown, Colo.

Either trout or black bass would be suitable. If your lake is deep and cold, trout would probably be better than bass. You can get trout fry by applying to B. C. Hosselkus, Creede, Colo. Black bass can be had of the Benkleman Fisheries, Benkleman, Neb.

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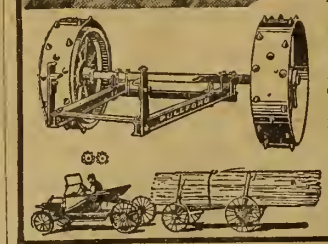

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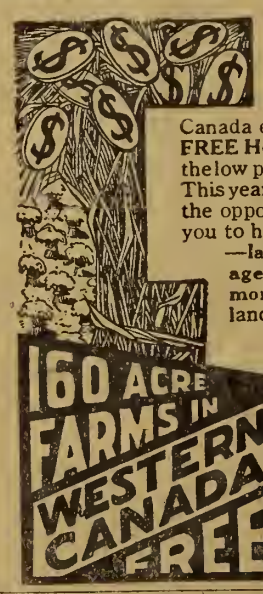

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The Government this year is asking farmers to put increased acreage into grain. There is now a great demand for farm laborers to replace the many young men who have volunteered for service in the war. The climate is healthful and agreeable, railway facilities excellent, good schools and churches convenient. Write for literature as to reduced railway rates to Supt. of Immigration, Ottawa, Canada, or to

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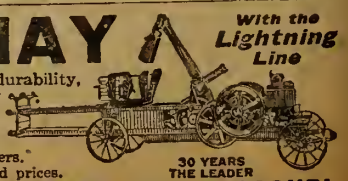

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WESTERN FARM LIFE

A Western Magazine for Western Farmers and Stockmen

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Largest Circulation of Any Farm Magazine in the West

Volume XIX | DENVER, COLORADO, JULY 1, 1917 | Number 13

An Overdone Fruit District Redeemed With Alfalfa

UNCOMPAHGRE VALLEY COMES BACK VIA THE LIVESTOCK ROUTE

WARREN FERDE WILCOX

ALFALFA, with stock raising and feeding, compriso the chiof industry of the Uncompahgre valley in western Colorado, watered by the famous six-million-dollar Gunnison tunnel and canal. Many million dollars worth of wheat, sugar beets, potatoes and onions were harvested the past year and all is indirectly attributed to the keystone of irrigation farming—alfalfa.

Montrose and Delta counties, lying in the Uncompahgre valley, experienced, in common with other sections, phenomenal prosperity. The agricultural production of these counties was probably over ten million dollars, not bad for a practically new region, for the Gunnison canal has been supplying water for irrigation but six years, although some of the valley had a sort of water supply before.

It is significant that the very best year the valley has ever seen was one in which fruit played a negligible part. The big freeze of last spring killed practically all the fruit, so that even with big prices for what was harvested the fruit crop was less than one per cent of the total crop value.

A few years ago, after two or three big crops of fruit were harvested which brought good prices, the valley was boomed upon its fruit growing merits. Prices of land were inflated and easterners flocked in and paid a thousand, fifteen hundred, and even more dollars per acre for orchards. Then came the awakening. Many lost all they had and leaving the country said unpleasant things about it. Gradually prices assumed their normal proportions.

People are now progressing along safe and sane lines and it is often advised one asking what is the best kind of an orchard to plant, to "plant an alfalfa orchard."

Alfalfa Key to Success

Alfalfa is the key to the success. According to the carefully prepared statistics of the U. S. reclamation service, 40 per cent of the farming land of the valley is in alfalfa. Last year, reckoning the crop at $7.32 per ton, alfalfa was worth 19 per cent of the total crop value of the valley. But when fed to live stock alfalfa must necessarily take its place at the head of all crops in value. Potatoes with 7.7 of the total crop were worth 37.7 of the whole crop value and wheat with 18.7 of the total crop area was worth 15.5 per cent of the total crop value.

Without the soil having been previously prepared for these crops through the growing of alfalfa, such tremendous yields as were reported, could not possibly have been produced. Be it known that in this valley no commercial fertilizers have ever been used and but a small per cent of the ground has ever been enriched by the manure spreader. Yet yields of 585 bushels of potatoes, 75 of wheat, 775 of onions, 100 of corn, and so on, were recorded. Alfalfa enriches the soil while producing profitable crops so that high yields follow the breaking of alfalfa ground.

Typical Silage Corn at Montrose, Colo.

A new factor in the valley's feeding operations is the growing of corn and the coming of the silo. For years it was believed that corn could not be profitably grown at altitudes of a mile, and under irrigation. These theories have been exploded and as fine fields of corn as are grown anywhere are being produced in the Uncompahgre valley. Now there are 35 or more silos in the valley and eight of them are being used to feed beef cattle and sheep for the market. These silos are of various kinds, including wood stave, cement stave, metal and pit.

A silo excursion was run thru the Uncompahgre valley recently in charge of Prof. H. A. Lindgren, the government agriculturist on the project. A hundred representative farmers, stockmen and business men took part and the result was an eye-opener to many.

At the Patnode ranch, on Ash mesa, are two silos, and Mr. Patnode was feeding cattle for James Page, a Montrose butcher. Here a new wrinkle in feeding was seen, the winter use of the ensilage cutter which otherwise would be standing idle. Mr. Patnode was busy cutting up damaged second cutting alfalfa with the ensilage cutter. As a result the cattle were eating the hay up clean and putting on fat. The hay is put thru the ensilage cutter at the rate of two tons per hour, is chopped up exceedingly fine and blown into a large bin-like structure surrounded by mangers, so arranged that it is an automatic feeder. Mr. Patnode grew 200 tons of corn silage last year, the crop making fifteen tons to the acre. He gets so much a pound for what weight he puts on the stock and is said to make as high as $14 a ton out of his silage, the stock being weighed in and out before and after feeding.

Other silos were visited but the big feeding scene is at the ranch of Carl Westensen, a Dane, on California mesa. He started farming on his present location in 1904, buying on credit 160 acres. The first two years he lived in a tent, but today he has 300 acres of the best land in the valley, 7,000 head of sheep, 37 head of horses and cattle, and is a leading resident of the valley. The past year he had 120 acres of alfalfa, 50 of potatoes, 27 of beets, 25 of corn, 13 in fruit, 8 in onions, and 3 in carrots.

The Westensen sheep feeding pens make one think of the stockyards of some city. Here we saw another use for the ensilage cutter. Mr. Westensen grows stock carrots and beets. These are ground up in the ensilage cutter, coming out like pulp. Mr. Westensen's carrots last year were a marvel. Some were actually three feet long and he says they went 40 tons to the acre.

The silo excursionists witnessed the feeding operations. The electric motor was started and two men shoveled carrots into the silage cutter. The pulp was blown out into two wheeled carts. The carts were driven thru the feed yard, the pulp being distributed in the feed boxes, then the carts were backed up to the silo and loaded with silage which was placed in the troughs; then a little shelled corn was spread on top and finally the oil meal. When all was ready the gates were opened at the different sections and the sheep came bounding in. This is done twice a day and hay is also fed. The ration consists of one pound of ensilage, two of carrots, one-half of shelled corn, and three ounces of cotton seed meal.

Mr. Westensen is a pioneer in the valley and has seen some changes. The second year of his venture he sold his alfalfa for $7 per ton, baled and on the cars ten miles away. He says he paid 18 per cent interest for a real estate loan, and has seen the day when his check for $5 was not acceptable ten miles from home and when he tried to negotiate a note for $32 he could not. For the first five years it was hard work. Today Westensen's credit is gilt-edged and he can get all the money he wants. Alfalfa, stock feeding and stock raising did it.

The coming of a beet sugar factory to Delta will augment the feeding business with the pulp, refuse, molasses and other by-products. On the mountains nearby are the great ranges where the sheep and cattle are turned in summer at practically no expense.

What the Old Timers Say

As to the connection of stock raising with ordinary agriculture, I quote from Jesse Bell, one of the pioneer stockmen, who said a few days ago: "Our crops are big, especially in potatoes and onions. Why? Because of the richness of our soils. All old-timers can remember when you couldn't raise enough potatoes on the mesa to pay for the trouble. Now things are different. Why? Because alfalfa and stock raising have enriched them to such an extent that yields are simply enormous.

"Those of us who own stock and farms could sell our cattle any day for cash, quit the business and grow spuds to beat the band for two or three years on our high-grade land, but about the third year we would find our fertility gone and would have to go

(Continued on p. 13)

Silo and Holstein Dairy Herd on Loesoh Brothers' Farm, Montrose County, Colorado

Save Surplus Fruit and Vegetables by Canning

THREE HUNDRED MEETINGS FOR HOUSEWIVES IN COLORADO

Canning Inquiries Answered

Western Farm Life will answer questions from readers in regard to home canning methods and difficulties. Address your question to Home Department, Western Farm Life, Denver, Colo. Mrs. H. T. French, editor of that department, has had years of experience in canning and is thoroly familiar with the old as well as the newer methods advocated by government experts. Her advice is free to every woman reader, no matter where located.—Editor.

Don't have an empty preserving jar in your home next fall.

There may be some difficulty in securing cans and preserving jars.

Reserve regular tight sealing containers for vegetables, concentrated soups, meats and fish.

Concentrate products so that each jar or can will hold as much food and as little water as possible.

Put up jams, jellies and preserves in glasses sealed with cork, or paper, or paraffin. Pack fruit juices in ordinary bottles.

Don't can anything that can be kept just as well dried or in other forms.

Produce root crops—cabbage, potatoes, beets, etc.—that can be kept for winter use without canning.—U. S. Department of Agriculture.

San Luis Valley Girls in a Canning Contest

CONSERVATION of the unusual quantities of food crops grown in gardens, orchards and on farms this season is now receiving attention from those in authority. The first step toward saving every pound of surplus was taken in June, when the Boys' and Girls' Club department of Colorado Agricultural College began a campaign of education among housewives in the principles of preserving fruits and vegetables by canning, evaporating, drying and storing. Two hundred meetings had been arranged for by the middle of June and the prospect was that there would be calls from over the state for at least a hundred more.

W. E. Vaplon, state leader of Boys' and Girls' clubs, and Miss Maude Sheridan, his assistant, are in active charge of the campaign. They are being assisted by a crew of lecturers, some from the college, others volunteers.

Preliminary to the campaign, a two days' school of instruction was held at Fort Collins, at which community leaders from all parts of the state were drilled in the various methods and provided with material for lectures and demonstrations.

Housewives should apply at once to the Boys' and Girls' Club department, at the Agricultural College, Fort Collins, for a new government bulletin which covers the entire subject. A supply of this bulletin, which combines in convenient form the pamphlets previously issued, has been furnished the college, so that distribution will be facilitated. Copies are sent free on application to anyone in Colorado. Those in adjoining states may send to their own agricultural college for this bulletin or to the U. S. Department of Agriculture at Washington, D. C.

Tin Cans Double in Price

Because of the great demand for steel in the manufacture of munitions, ships and war material, tin plate is scarce and high. Tin containers for fruit and vegetables have advanced enormously in price and housewives are finding themselves confronted with a new item in the cost of living. For this reason the canning experts are urging the use of glass, especially of old bottles and containers that may be on hand. Tins that usually sell at 2 to 2½ cents each at retail, this year will be offered at 5 to 6 cents, which adds so greatly to the cost that home canning loses much of its value in the economy program.

The campaign started the latter part of June in northeast Colorado, where the women of the plains are given advice principally in the preservation of vegetables for winter use, there being comparatively little fruit grown. One of the things emphasized is the storage of vegetables, especially root crops, in pits dug in the ground.

No expensive equipment is necessary in order to successfully preserve fruits and vegetables. The cold pack method is commonly used and where the housewife does not wish to invest in a commercial canning outfit she can rig up her own equipment. Wash boilers, lard cans or other vessels with a tight cover, and which can be fitted with a false bottom, can be used in the canning of fruits, vegetables, soups or meats.

The Wash Boiler Method

The wash boiler method is described as follows:

Provide a false bottom of wooden lattice work, cross pieces of wood, or coarse wire netting for your clean wash boiler or other large, deep vessel to be used for sterilizing. Fill the vessel with clean water so that the boiling water will cover the tops of the jars or cans. Begin heating the water so that it will be boiling violently by the time the containers are packed. See that all cans or jars are in good condition and absolutely clean. Scald them thoroly. Use new rubber rings and scald them just before putting them on the jars.

Start with clean hands, clean utensils and clean, sound, fresh products. Throw out all vegetables and fruits which are withered or unsound. Wash out all grit and dirt. If possible, use only fruits and vegetables picked the same day and never can peas and corn picked more than five hours.

Prepare fruits and large-sized vegetables for blanching. Remove all spots from apples. Prepare beans and greens as for cooking. Be especially careful to remove all foreign plants from the greens. Blanch vegetables and all fruits except berries by leaving them from three to five minutes in clean boiling water. Remove the blanched products from the boiling water and plunge them quickly into cold water, the colder the better. Take them out immediately and let them drain. **Don't let them soak in the cold water.**

From this point on, speed is highly important. The blanched vegetables and fruits, which are slightly warm, must not be allowed to remain out of the jars a moment longer than is necessary. Remove skins when required, and as each article is pared cut it up into proper size and pack directly into the clean, scalded cans or jars.

Pack as solid as possible, being careful not to bruise or mash soft products. In the case of fruit, fill the containers at once with boiling hot sirup.

In the case of vegetables, fill the containers with boiling hot water to which a little salt has been added. Place scalded rubber rings on the glass jars and screw down the tops. Seal tin cans completely. Watch them for leaks. As the preliminary treatment has taken care of expansion, it is not necessary to exhaust the cans.

How to Sterilize

Put the jars or cans as soon as possible into boiling water in a wash boiler or into your canning device. Let them process for the time specified in the table, counting from the time the water begins to boil again, or the gauge on the canning outfit registers the proper pressure.

The accompanying time table covers the scalding, blanching and sterilizing of common fruits and vegetables produced in the Rocky mountain region.

Time schedule given is based upon the one quart pack and upon fresh picked products. When processing fruits in steam pressure canners, not over 5 pounds of steam pressure should be used. When processing vegetables and meats do not use over 15 pounds of pressure. After processing, remove the containers.

Tighten the tops of jars immediately and stand the containers upside down in a cool place, being careful that no draft strikes the hot jars. Watch for leakage and screw covers down tighter when necessary. Store in a cool, dry place, not exposed to freezing temperature. Use band labels for cans, being careful not to let the glue get on the can itself, as it may cause rust. From time to time, especially in very hot weather, examine jars and cans, making certain that there are no leaks, swellings or other signs of fermentation.

PRODUCTS—	Scald or Blanch Minutes	Hot Water Bath Outfits at 212° Minutes	Water Seal Outfits at 214° Minutes	Steam Pressure 5 to 10 pounds Minutes	Pressure Cooker 10 to 15 pounds Minutes
Blackberries	no	16	12	10	5
Cherries	no	16	12	10	5
Peaches	1 to 2	16	12	10	5
Plums	no	16	12	10	5
Raspberries	no	16	12	10	5
Strawberries	no	16	12	10	5
Currants	no	16	12	10	5
Gooseberries	no	16	12	10	5
Apples	1½	20	12	8	6
Pears	1½	20	12	8	6
Special Vegetables and Combinations—					
Tomatoes	1 to 3	22	18	15	10
Tomatoes and Corn	T.2, C.10	90	75	60	45
Eggplant	3	60	45	45	30
Corn on cob or cut off	5	180	90	60	45
Pumpkin	5	90	50	40	35
Squash	5	90	50	40	35
Hominy	5	120	90	60	40
Cabbage or Sauerkraut	5	90	75	60	35
Greens or Pot Herbs—					
Asparagus	5	120	90	50	35
Brussells Sprouts	5	120	90	50	35
Cauliflower	5	120	90	50	35
Pod Vegetables—					
Beans (Lima or String)	5	120	90	60	40
Peas	5	120	90	60	40
Roots and Tubers—					
Beets	6	90	75	60	35
Carrots	6	90	75	60	35
Other roots and tubers as Parsnips or Turnips	6	90	75	60	35
Soups, all kinds	..	90	75	60	45
Poultry and Game	20	210	180	150	60
Fish	5	180	180	150	90
Pork and Beef	30	240	240	210	90

New Dry Farming Bulletin

"Dry Farming in Colorado" is the title of a bulletin just issued by the Colorado State Experiment Station. It is No. 227 and the author is Prof. Alvin Kezer. The definition of "dry farming" as given in the bulletin is as follows: "Dry farming, as commonly understood, means the production of crops without irrigation, in a region where rainfall lies between the approximate limits of 10 to 20 inches per annum. If the rainfall is much less than 10 inches the type of farming becomes arid, and when the rainfall lies much above 20 inches the type of farming followed falls in the class of humid farming.

"Successful dry farming depends upon the proper adaptation of crops, the finding of the principles of water movement in the soil, and an understanding of the principles of moisture conservation and what practical methods of plowing and other cultivation must be followed to get paying results. Most new settlers in Colorado dry farming sections have attempted to gain success by grain farming. Long experience has shown that a permanent agriculture may be built up in dry farming sections only where a diversified system of farming is followed. This means a variety of crops, feed and forage crops, with a properly balanced amount of livestock."

Aside from treating of the general principles and practices of dry farming, the bulletin goes into detail with reference to all crops generally grown, giving seed bed preparation, rate of seeding, cultivation methods, harvesting, etc. Every farmer in Colorado, whether on irrigated or non-irrigated land, should read this bulletin. Copies are sent free on application to anyone in the state.

Spuds in Ground All Winter

The Ruckman brothers were in town Saturday and bought a potato digger with which to dig several acres of spuds which last fall's inclement weather did not allow them to dig. The potatoes kept well all winter, being covered by the heavy fall of snow. They are just as good to eat as they ever were and will make good seed potatoes. H. C. Lyon tells us that he also had several tons of potatoes to dig this spring, as did Gore and Finnerty. The latter said a few rods of the potato patch where the snow blew off were frozen, but the rest were all right. Routt county is a place where you can dig potatoes the year around.—Routt County Republican.

Beekeepers Organize to Market Mountain Honey

SOME OF THE PROBLEMS THAT CONFRONT THIS INDUSTRY

ALVIN T. STEINEL

NECTAR drawn from Rocky mountain blossoms by the busy bee makes the sweetest honey n the world. Beekeeping has become r important industry in the mountain tates, as a side line to fruit and gen- ral farming, and as a specialized busi- ess by beekeepers who give their en- ire time and attention to the study f the honey bee and its peculiarly ntelligent activities in the pollination f fruit and other blooms.

It is estimated that Colorado alone as some 7,000 honey producing farms. Other Rocky mountain states have a sser number of bee-keeping farmers. ut in every state in this region the roduction of honey and wax is car- ied on extensively.

There is now on foot a movement o organize the producers of all the nountain states into one association, vith a view to establishing a central narketing agency, patterned some- vhat after the organizations of fruit rowers, with one general brand, uni- orm grading regulations and other eatures of benefit to both producer nd the honey consumer. A prelim- nary meeting was held recently in Denver at the call of the Office of Markets of the U. S. Department of Agriculture. W. H. Kerr, chief of he Colorado division of markets, ad- vised with the honey producers who attended in regard to organization plans and governmental assistance in getting the association started along proper business lines. During the summer meetings have been scheduled for this and neighboring states, at which the objects of the proposed or- ganization are to be talked over with he large and small producers of honey.

The following organization commit- tee was named: Wesley Foster, chair- man; F. L. Stone, Denver (Denver dis- trict); Clyde Fisher, Montrose (West- ern slope); C. B. Coffin, Rifle (Grand valley); Harry Ingalls, Ordway (Ark- ansas valley); Charles Adams, Greeley (northern Colorado; Wells Pollock, Al- lison (southwestern Colorado); W. A. Cheek, Merino (northwestern Colo- rado).

One of the features that appeals to most bee keepers is the fact that such an organization will enable them to put the credit of the organization be- hind the purchase of supplies. It costs from $1 to $1.50 per colony of bees to procure these supplies and individuals find their cost of production inor- dinately high. By collective action this cost can be materially reduced and supplies can be purchased with- out the necessity for putting up the cash in advance. It will put the bee keepers on the same footing as other organized lines of agriculture in financ- ing their operations.

Colorado and Idaho are now among the large honey producing states of the Union. One Colorado concern, the Polhamus interests at Lamar, has about 2,000 colonies of bees making honey this summer. Another leader in the industry is Wesley Foster of Boulder, with about 1,600 colonies in this state and in Idaho. Herman Rauchfuss of Denver is managing some 1,200 colonies.

The mountain states are peculiarly suited to bee culture because of favor- able climatic conditions and the pro- fusion of blooms. Alfalfa fields fur- nish perhaps the greatest amount of nectar, with fruit blooms and sweet clover next and wild flowers also play- ing an important part in keeping up honey flow. The much abused dande- lion is a source of nectar early in spring—the very earliest. During May and June the foothills and adjacent slopes are the hunting grounds of mil- llons of bees; later they are generally found buzzing over the alfalfa fields and flower gardens. When the bee is busy the bee keeper, if he expects to make any profit from his hives, is busier than a bee. It is then he must seek to prevent swarming and to "work with" his bees in ways that the uninitiated cannot comprehend. The bee keeper has as many troubles as the farmer in any other line—often more. He must fight disease. In Colo- rado and some of the other western states there is state and county inspec- tion, which results in stopping the spread of infection. In Colorado this work is handled under the supervision of the state entomologist, Prof. C. P. Gillette, who assigns an experienced bee keeper as his deputy. The state deputy is Wesley Foster, who gives a portion of his time to supervision of state inspection. Most of the fruit- growing counties have county inspec- tors to carry out the regulations of the state inspection department.

The relationship between fruit growing and bee keeping is intimate. Pollination experiments now being made in California have already de- veloped some interesting facts. Two prune trees in the Santa Clara valley were enclosed in tents of white mos- quito netting. From one tree all in- sects were excluded during the blos- soming period. Under the other tent was placed a hive of bees during the blossoming period of five days.

The trees were of the same age and size and each had approximately one thousand blossoms. The tree under the tent with the bees matured 193 plums, or 18.5 per cent of the blos- som crop. The tree from which the bees were excluded matured only eleven plums, a trifle over 1 per cent. Further experiments are in progress, but the first results show clearly the value of bees in the orchard.

One of the serious problems of the industry is that of winter losses. Gov- ernment figures for the winter of 1914- 15 show losses in the mountain and Pacific coast states as follows: Wyo- ming, 19.1 per cent; Colorado, 10.5 per cent; New Mexico, 9.2 per cent; Ari- zona, 2.0 per cent; Utah, 10.5 per cent; Nevada, 5.0 per cent; Idaho, 5.9 per cent; Washington, 19.8 per cent; Ore- gon, 3.9 per cent; California, 5.0 per cent.

The average loss that winter for the entire United States was 12.6 per cent.

Dr. E. F. Phillips, in charge of Bee Culture Investigations for the Depart- ment of Agriculture, states that this great loss is due largely to careless- ness and lack of knowledge, and that it can easily be reduced to less than 1 per cent. One reason given for the loss is the erroneous belief that be- cause unprotected colonies often live thru the winter, no protection is nec- essary. Winter losses are by no means confined to the northern latitudes, but are often just as severe in the southern as in the northern states, and from the same causes. Dr. Phillips gives two causes for winter losses which are, barring accidents, the only causes, namely, inadequate stores, and exces- sive heat production. He says:

"If bees can be kept in an environ- ment such that the temperature of the air immediately surrounding them is 57 degrees F., or slightly above, they are saved much unnecessary and un- profitable labor. To the theoretical objection that bees need exercise it is necessary only to state that the authors have so wintered bees in a cellar as well as outdoors with won- derfully successful results. If the bees are kept in a cellar under the best conditions the results are excellent. * * * If wintered outside in a packing case with abundant insulation, any heat generated escapes slowly and the temperature of the air in the hive rarely falls below 55 degrees, F. If inadequately protected the tempera- ture of the hive cannot be kept so high and the bees must generate much more heat. In single walled hives it is common for the temperature of the air around the cluster to fall to freez- ing or lower, in which event the bees generate an excessive amount of heat and perhaps die when they are no longer capable of the necessary mus- cular activity. The necessity of pack- ing is thus made clear, and in any locality in which the outer tempera- ture often falls to 40 degrees F. or be- low, it is desirable to protect bees to conserve their vitality. If the tem- perature should fall to 40 degrees F. only a few times during the winter this would not be serious enough to make insulation necessary. It is obvi- ous, however, that winter protection is beneficial thruout practically the en- tire United States."

Organization will help solve the win- tering problem.

Increasing Honey Production

Bee swarming is natural and cannot be entirely prevented, tho it can be regulated. Some strains of honey bees, such as the small black bees, swarm more often than others, tho all strains may be expected to swarm when conditions are right. To secure the greatest production of surplus honey reduce swarming to a minimum. By repeated swarming many weak col- onies are produced, each of which stores little if any sulplus honey, and they may all be so weak that they will perish during the following win- ter.

Congestion in the hive, tree or other abode, a restriction of the brood nest, over-heating due to poor air circula- tion and the lack of shade, and an over abundance of drones, are some factors which tend to encourage swarming. Leonard Haseman of the University of Missouri College of Agriculture offers the following suggestions for regulat- ing swarming: Make the abode of the colony comfortable, give it shade, remove drone brood, provide plenty of room for surplus honey in the supers, and make sure that the brood chamber is large enough to accommodate the colony.

The tendency to swarm is usually most noticeable during May, June and early July and if the foregoing pre- cautions are taken in time they will help prevent development of the swarming fever. If the swarming fever is once developed by a colony, swarm- ing is much more difficult to prevent. The careful removal of queen cells every week may help to prevent the swarm from emerging, but may not relieve the swarming fever. By re- moving part of the brood combs rich in brood and by giving them to weaker colonies in exchange for some of their combs which have little or no brood, the normal emergence of brood is dis- turbed which tends to relieve the swarming fever.

It should be remembered that the production of comb honey encourages swarming more than the production of extracted honey. Under present con- ditions, when it is urgent that more honey be produced to relieve the sugar shortage, small as well as commer- cial beekeepers are urged to produce more extracted or chunk honey and less of the fancy section honey. Bees work more readily in frames than in pound sections, and where the honey is extracted and the empty combs re- turned for refilling, much more honey will be obtained. This in itself will materially help to regulate swarming.

Upper View—A $300 auto load of honey from the Foster Apiary at Boulder, Colo.
Lower—One of the Foster Bee Yards.

A Word for the Farmer

An analysis of the farmer mind at the moment will be helpful to all. He must be amused at the sudden deep solicitation of the banker for his wel- fare, for he remembers the interest and renewal commissions he has paid this man.

Looking backward he sees 1893 when he sold his corn for 16 cents or burned it in the kitchen stove. The hogs went for a pittance.

Rightly or wrongly he suspects, or believes, he has no part in naming the prices for his produce. Speakers and newspaper headline writers have made him believe the "Board of Trade" has priced his grain, the "Packers" priced his live stock, and the "Elgin Board" his butter fat, the free lance speculator his eggs. He cannot forget when he sent that carload of apples to Market street expecting a good return, and in place of which he received the polite request to send his check to cover expenses. He has never been able to see why his potatoes must re- main on the ground, unsold, when the Chicago man, a hundred miles away, can't afford to use them on account of high price.

Suspicious by nature, he is doubly suspicious of the hue and cry, from every side, that he grow crops to the limit of his financial ability; breed all the brood animals on the place, etc., etc. Isn't he doing as much as the other fellow?

Manufacturing and merchandising are always paralyzed by uncertainty, the currents in the channels of com- merce at this very moment are slow- ing down on account of price uncer- tainty. The farmer isn't a fool. What of his prices? Business has the machin- ery to stabilize and will soon run on as usual. Provide the machinery to stabilize the prices of the 1917 farm crops and the farmer will take care of the rest.

Give the farmer a chance to brace himself and you can lean on him, and "business as usual" may once more be the order of the day. You won't have to worry about enough to eat for our people and allies.

For years he has had preached to him, by government and state official, "Don't follow Europe in securing large yields per acre. Remember prices are best obtained by holding down produc- tion."

Let the federal government establish prices of crop and live stock, help the farmer to credit and labor, and the farmer will do the rest.—Dr. H. E. Horton.

College Buys Another Registered Holstein Bull

Colorado Agricultural college has just brought another Holstein bull—Sir Pietertje Johanna Mercedes No. 130,072. He is three years old, sired by E. C. Schroeder's herd bull, Sir Pietertje Ormsby Mercedes, who has eight daughters who have records of over 1,000 pounds of butter in one year. This bull's dam has a record of 26 pounds in seven days, and is one of the seven sisters by the same bull, with records ranging from 26 to 38 pounds. The sire of this bull's dam is the sire of Bess Burke Second, said to be the largest registered cow of the breed. Her weight is 2,200 pounds and she has an official record of 38 pounds of butter in one week.

A Field Pea Enthusiast

You may have heard some comment lately about a world-wide shortage of food and food products.

I may be a little bit subsequent and afterwards, but permit be to butt in a word at this late date. My mail box will have to be enlarged owing to the voluminous and multitudinous pamphlets and circulars sent to me by the government and the agricultural colleges.

Who in heaven's name pays that vast bill since the democrats took the tariff off, urging us to plant, plant, plant and so kindly showing us how? But in all the sea of literature and words, words, words, not one word have they spoken about a plant that I have learned to admire much and one that is particularly adapted to our climate, the Canada field pea. It will outyield corn in grain about 25 per cent under the same conditions of fertility of the soil, also furnish two to three loads of fine hay if properly and promptly harvested. The grain yield following the peas will also be 25 per cent greater than the yield following corn. Our climate is adapted to the pea plant, but the man that tries to butt against this climate and tries to raise corn—well, his credit isn't very strong with me.

If any of your readers wish to work with the pea tell them not to make the mistake I did the first year—let the pigs do the harvesting. I found they popped out on the ground and the fall rains sprouted them. They should be harvested promptly at the exact moment, stacked as soon as possible and the stack carefully covered. Then your man has hay and grain for anything that can break his fence down and swipe it. The pigs eat up the last stalk and they should be planted a mile from the house to keep the chickens from tearing them out of the ground. There is no plant that rejuvenates the soil so unless it is the blessed and beneficial alfalfa, and it is not so devilish hard to subdue.

One other virtue I am sure the pea possesses. If this spirit of fellowship and brotherly love that we see everywhere all over this wide world continues much longer, I am sure, altho I have never tried it, we could grind it up in the coffee mill in the morning and make fine pancake flour from them.

Please give my kind regards to old Mr. Putnam. I don't know who he is or where he came from, but he is sure a dear old monkey. Tell him if he stumbles along this way and don't find me here, to kick the door down.

I would not advise dry landers to plant peas unless they plant them early on carefully summer-fallowed land. They are adaptable to any season almost, February or June.

F. C. SIGLEY, Longmont, Colo.

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Drilling Water Wells is a profitable, healthful year-round business. There are wells all around you to be drilled. Don't you want to get into a money-making business for yourself? Write for particulars. **Star Drilling Machine Co.** 669 Washington St., Akron, Ohio

Dynamite for Prairie Dogs

Don Leonardo Ruiz, a California rancher, says "dynamite is the proper medicine to give ground squirrels, gophers, prairie dogs, and other burrowing rodents." This is what he claims for his method:

Take an inch and a half or two inches of dynamite and put it in a bit of cloth or several thicknesses of paper to form a small round cartridge. Tie the cloth or paper firmly about one end of a short piece of fuse—say, 12 or 14 inches long; but do not use a cap. Make up as many of these charges as you think you will need for the occasion—one for each squirrel hole.

Insert a charge well into the mouth of the hole and with a piece of wood or an old big spoon, the hand or any convenient way, pack the loose dirt around the fuse, leaving enough of the end outside to light easily. Light the fuse and go to the next hole and do the same thing over again. There will be no explosion; but it is not necessary to stay in front of the hole to watch it.

There being no cap or other detonator, the dynamite will simply burn, filling the hole with dense, poisonous fumes, that will almost instantly stifle and then kill every living thing inside.

1. From the above it will be seen that the method is cheap. One stick of dynamite does for four or five holes. The cost for material is about two cents each.

2. It is quick and easy, for there is no digging to do, as when either poisoned bait or traps are used. A boy can do the work.

3. It is certain, for if enough powder is used the hot gases reach every crack and cavity in the burrow.

4. And very important, it is safe, for there is no poisoned grain lying about to be eaten by birds; no poisoned carcasses to be eaten by some pet cat or dog; no bodies to be buried, and NO POISON TO HANDLE.

One man can go over a large field in a day, and the dirt in the mouth of a hole shows that it has been loaded. An open hole anywhere calls for attention.

An easy way to light the fuses is to have a second person follow the loader, carrying a candle in a gallon size fruit can. The can protects the flame from the wind.—The County Agent.

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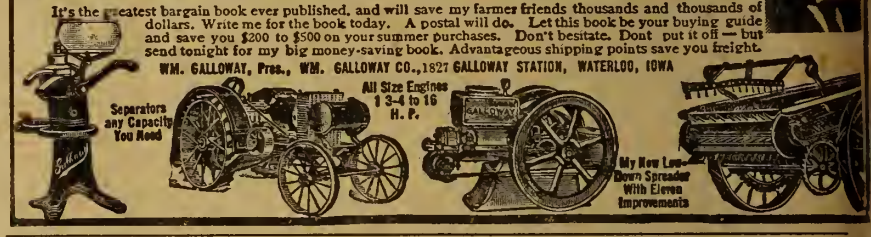

Colt Was Foundered

I have a 4-year-old colt that has only been worked once and he seems to have no strength. He stands with his hind feet braced and lifts one foot and then the other. He got away at one time and his hind feet grew out quite long. Would like to know if he will get all right, or what I could do for him. There are also four horses here from Oregon; they seem to give out when worked. Is it change of climate or a disease? What can be done?—W. P., Ellsworth, Colo.

Possibly your four-year-old colt has been foundered. A horse foundered in all four feet usually stands persistently and with much evidence of pain lifts one foot and then the other and will not walk unless urged to do so with a whip.

The horses from Oregon may be affected with what is known as infectious anemia or, in common terms, swamp fever. The mere change of climate from Oregon to Colorado should not seriously affect your horses. Infectious anemia is a specific infection of horses and for which at the present we have no satisfactory remedy. We do know that the infecting agent is eliminated in the urine of horses that are suffering with the disease. The symptoms are not well defined. Affected animals gradually grow weaker, tire easily while at work, frequently yawn like a tired person, and the mucous membrane in the mouth gradually becomes pale and bloodless. Horses live with this disease for several weeks or months but seldom recover.

Long-distance diagnosis is not very reliable and it will be well to have this condition of your horses investigated by a competent veterinarian.—Dr. G. H. Glover, Colo. Agricultural College.

Pasturing Grain Crops

Answer to W. A. J., Weld county, Colo.: It is possible to pasture fall barley and spring emmer, provided the surface of the soil is dry. Pasturing in any case should not be permitted until the crop commences to joint, when the stock should be removed. If the soil is wet, pasturage should not be permitted, as it will injure the growing crop more by tramping the soil. Winter wheat is much more easily pastured than a spring crop, because it gets a longer start in advance of the first pasturage. It is possible, however, to pasture spring crops to some extent, provided the above precautions are observed.—Alvin Kezer, Chief Agronomist, Colorado Agricultural College.

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Sweet clover deserves more attention from dry land farmers. As a pasture and hay crop it has proven a success under conditions that make alfalfa growing extremely uncertain.

Sirup From Sugar Beets

The first step in making beet sirup consists in topping and cleaning the roots. The crowns should be cut off at the point of the lowest leaf scar. The reason for this is that the crown or upper part of the beet contains a large part of the salts taken from the soil in the process of growth. It is desirable to have the sirup as free as possible from these mineral salts which if present in too large quantities, would render the sirup unpalatable.

In cleaning the roots they may be placed in a tub or other suitable receptacle and covered with cool water, to loosen the dirt and to make the roots more crisp. After soaking for a few minutes, until the dirt is loosened, they should be thoroly scrubbed. A coarse brush with stiff bristles or wire is useful in this work. After the roots are thoroly washed they should be cut into thin slices. A 3-bladed kraut cutter, securely fastened on the top of a barrel, has been used in field experiments and found very satisfactory. The upper head of the barrel should be removed, so that the beet slices will fall directly into the barrel. If a kraut cutter is not at hand, any slicing device, the simplest of which is a butcher knife, will be satisfactory. The slices should be very thin. The thinner the slices the more rapidly the sugar is extracted. In field experiments slices only one-sixteenth of an inch in thickness were obtained. The slicing box of the slicer was not used, the beet root being held in the hand and pressed against the blades of the slicer.

Extracting the Sugar

A bushel of beets will make approximately two bushels of slices, which should be placed in a barrel and covered at once with hot water. About 10 gallons of water will be required to cover them. An excess of water should be avoided, since it would increase the amount of evaporation required to reduce the solution to the desired consistency. If boiling water is used, the temperature of the slices will reduce the temperature of the water to about the proper degree, from 70 degrees to 80 degrees C. (158 degrees to 176 degrees F.) for the extraction of the sugar. The barrel should be covered with several thicknesses of canvas to hold the heat. The sliced beets should be permitted to soak for about 60 minutes, and the barrel should be agitated from time to time without uncovering it.

The water should now be drawn off and strained thru several thicknesses of cheesecloth. No pressing is required to remove the juice from the beet. If the barrel is provided with a faucet near the bottom for the purpose of drawing off the liquid, it will be found convenient. The soaking does not remove all the sugar from the beet slices, but by far the larger part of it is extracted if the slices are sufficiently thin and the water is of the proper temperature. The resulting liquid is of a light-brown color, with a sweetish bitter taste. The refuse beet slices are a valuable feed for chickens, hogs and other livestock.

Boiling the Juice

The juice may be placed in a kettle or other convenient receptacle, where it should be heated slowly until it has evaporated to the proper consistency. It should be noted that evaporation depends upon the temperature, the surface of the liquid exposed, and the condition of the air above the liquid. In experiments made by the writers, a 30-gallon copper kettle was used. Slow boiling is important in making beet sirup, and several hours will be required to complete the evaporating process. This may be done on the kitchen stove or a kettle may be suspended in the open, and fire should be maintained sufficiently hot to keep the liquid boiling until the proper amount of evaporation has taken place to produce the desired consistency of sirup. Some people like a thin sirup, while others prefer a thick product. In boiling the juice, care should be taken to avoid burning. A little experience will enable one to accomplish the boiling without scorching the sirup.

Skimming

While the boiling is progressing, a scum will rise on the surface of the liquid; this should be removed carefully by means of a skimmer. An old-fashioned milk skimmer, or a basin with or without small holes in the bottom, will accomplish the desired result. The skimmer should, for convenience, be provided with a suitable handle. A small straight or curved stick of proper length, split at one end and slipped over the edge of the skimmer, will serve the purpose. The object in skimming is to remove the scum as completely as possible without wasting any of the liquid. This operation removes the strong, beet-like flavor and leaves a wholesome and palatable product. The removal of the scum tends also to keep the liquid from boiling over. As soon as the sirup has reached the desired consistency and has been skimmed carefully it may be placed in cans or bottles for future use. It should be canned or bottled while hot and tightly sealed or corked to prevent molding. * * *

Beet sirup may be used for all purposes for which other sirups or molasses would be employed, especially for table use; for example, on buckwheat cakes, in making dark-colored cake or in preparing certain kinds of home-made candy. If the evaporation is carried far enough and the sirup allowed to stand, a dark sugar will settle out. This sugar will be found very satisfactory for home use in cases where refined sugar is not necessary, such as in making pies or dark-colored cake.—From Farmers' Bulletin No. 823, by C. O. Townsend and H. C. Gore, U. S. Department of Agriculture. (Copies furnished free on application.)

Cutting Timber on National Forest

(1) Is it necessary to obtain permit to cut saw timber from land not in forest reserve; if so how is permit obtained?

(2) Is there a law book giving condensed facts on subjects commonly met by farmers and local officers?

(3) Give address of company handling machinery for sewing harness, shoes, etc.

(4) Give information as to how to trap or poison coyotes. Are odorous lures of any value?

(5) Could you suggest a forage plant for 7,000 feet altitude?

6) What chemical is used for purifying water for the army, and how is it used?—L. O. W., Utah.

(1) It is absolutely necessary to obtain a permit to cut saw timber from government land, even tho it is not in a national forest. You had better consult your nearest land office which is doubtless Salt Lake City, and get the particulars regarding a permit.

(2) You will find the "New Standard American Business Guide" will answer most questions in law, ordinarily met with by business men and farmers. This book is published by Gordon G. Sapp, Chicago, Ill.

(3) The address of the company handling machines for sewing harness, shoes, etc., is given by letter.

(4) You can obtain full information about trapping coyotes from Geo. J. Theissen, Stanwood, Iowa. Mr. Theissen is perhaps the best authority in the country in the trapping of wild animals.

(5) Sweet clover, brome grass, timothy and field peas are grown successfully at an altitude of 7,000 feet and over.

(6) Hypochlorite acid is used for sterilizing water for the army. This comes in tubes three inches in length by three-fifths of an inch in diameter. Each tube contains from 14 to 16 grains of calcium hypochlorite. This chemical contains 30 to 32 per cent chlorin which forms in the water hypochlorous acid and results in sterilizing the water. The process is one of oxidation and the water so treated is rendered safe for use. As the chemical is used more efficiently in clear water, a filter-cloth should be used for the purpose of removing all suspended matter such as clay, etc., so that the action of the chemical may be free and not be interfered with. All the organisms causing typhoid fever, dysenteries, etc., are promptly destroyed. Only five to ten minutes suffices after the addition of the powder to render the water safe to drink. The proper application to water of the requisite quantity of the disinfectant will bring about a practically complete removal of objectionable organisms without affecting the water to any noticeable extent. To secure the best results, however, it is necessary to apply the proper quantity of the disinfectant in the proper way.

Our Real Reserves

Grim war today drags whole nations in its wake. The organized machinery of the government and the army and the navy in all their power cannot fight unaided. They constitute only in small part the country's real forces.

The bones and sinews of campaigns are supplied by our developed farms and specialized farm machinery; our highly organized steel industry, factories and mines; our facilities of transportation and communication. Railroads, telephone and telegraph systems link together and speed up the many activities of the nation.

But these material resources are not the whole. Back of each industry and activity there must be organizations of human beings, requiring years of patient training and actuated by the spirit of loyal service.

This spirit and training for service in the common welfare constitutes above all else the real strength of a Republic and insures victory. Joining all the country's resources is a fine spirit, a thorough training, a great, sustained concentration of real effort typified by the Bell Telephone System.

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Regarding Wild Rye

Since the publication in the issue of June 1 of an article by W. J. Harsha on giant wild rye, many inquiries have reached us concerning seed of this plant. These letters are being answered as rapidly as possible. For the benefit of all readers, we wish to state that no wild rye seed is on the market. Those who are interested in trying out the plant for hay or pasture are urged to look for specimens in their own locality and to strip the seed this fall and save it for planting.

Mr. Harsha will collect seed and may have some for sale next fall.

Some adverse comment has been received. Farmers who have observed the plant for years claim that stock will not eat it when there is anything else green in sight. Of its hardiness and resistance to drouth and frost there is no doubt. The question seems to be that of palatability and food value. There is good opportunity for farmers who are familiar with it, especially in the mountain valleys and parks, to try it on their stock. Mr. Harsha does not claim to be the discoverer of the qualities of the plant, but he has observed it on his own ranch at 8,000 feet near Kremmling, Colo., for a number of years.

Professor W. J. Spillman of the U. S. Department of Agriculture says of giant wild rye:

"This grass produces an abundance of good seed which could easily be saved if a demand were created for it. It grows in a wild state in large clumps, but when planted at the rate of 25 or 30 pounds per acre it makes a uniform growth and gives a large yield of coarse but palatable hay. The hay is said by those who have fed it to be very nutritious, but it contains salts enough to make it decidedly laxative. It is therefore better adapted for cows than for horses. Yet some farmers who have grown it for horse feed speak highly of it. It deserves attention as a hay grass on soils too strongly alkaline for alfalfa."

The suggestion for its use on strongly alkaline soils should interest farmers in certain districts where alkali is a problem.

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Cut Out Pie? Never!

"Dog-gone" the Council of Defense of the state of Kansas!

That is about the way Farmer Putnam would express his displeasure at the recent suggestion coming from that august body in regard to the great American dessert, namely PIE. Nobody has hitherto suspected any connection between pie and war, but the Kansas Council of Defense, in all seriousness, asks us to refrain from eating pie because pie is an enemy of economy and, therefore, an enemy of the country. The Council says: "Pie is always expensive and it is often unwholesome, whereas war desserts ought, on the contrary, to be inexpensive and wholesome."

Cut out the pie? Never! Does the Kansas Council of Defense want us to lose the war? If so, let this anti-pie suggestion become a war regulation. Everything that is historic; everything that clusters about old New England memories; everything that brings up the Old Dominion and the days of George Washington; everything that goes into the making of American history is inseparable from and intertwined with the thot of pie in its many forms. Pie is the national American dish. To quit eating pie right at this crisis in the country's history would cause a breakdown in discipline in the army and a revolution among civilians. The Governor of Kansas should look well to the composition of his Council of Defense. Nothing is more plain than the fact that the council is dominated either by pro-Germans or by chronic dyspeptics.

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Sweet Clover for Pasture

"Grow sweet clover" is the answer for poor soil or worn-out pastures which no longer support livestock profitably, according to investigators of the United States Department of Agriculture, who have found that thousands of acres of sweet clover are furnishing annually abundant pasturage for all kinds of stock on soil where other crops made but little growth.

In many portions of the Middle West sweet clover bids fair to solve serious pasturage problems, according to Farmers' Bulletin 820, "Sweet Clover; Utilization," just issued. Native pastures which no longer provided more than a scant living for a mature steer on four or five acres, when properly seeded to sweet clover, will produce sufficient forage to carry at least one animal to the acre thruout the season. Dairy cattle, horses, sheep and hogs all do well on sweet clover. Land which is too rough or too depleted for cultivation, or permanent pastures which have become thin and weedy may be improved greatly by drilling in after disking a few pounds of sweet clover seed per acre. Not only will the sweet clover add considerably to the quality and quantity of the pasturage, but the growth of the grasses will be improved by the addition of large quantities of humus and nitrogen to the soil.

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Refuting Iowa's Aspersions

Figures prepared by the Federal Farm Loan board show the prevailing rates of interest on farm loans in the mountain states to be higher than anywhere else in the country, the South not excepted. In Colorado and Idaho the rate is 8.9 per cent, which is about on a par with the rate in some of the southern states where agriculture is not yet highly developed. Wyoming has an average of 10 per cent, New Mexico 10.5 per cent, and Utah 9 per cent. These figures bear out the contention of the Rocky mountain states to the effect that there is greater need for federal farm loans in this territory than in any other section of the country. They do not show, as is asserted in a recent editorial in Wallaces' Farmer, that the risk on loans is greater in the West than in the self-satisfied and non-progressive states that consider their agricultural development finished.

Usurious interest rates on western farm loans have been due to two causes: distance from sources of farm loan money, which increased the cost of making loans; great demand for what money has been available and a consequent high rate, because the lender always charges all he can get.

The truth of this was forcefully shown by the sudden drop in interest rates when the Feleral Farm Loan law went into operation. The lender is now offering inducements such as he never consented to before he had competition.

Keep The Youth In College.

In the present world crisis in which our nation is involved we, as American citizens, must be very careful not to allow our patriotic enthusiasm to cause us to lose sight of the fact that the education of our youth is even more important and necessary at this time than ever before. Our country is passing thru a demoralizing period; there will be a very strong tendency to go backward; there will be an instinctive inclination on the part of everyone to have a hand in the proceedings of the present, and unless we pause to take sober thought of the future we shall find, when the strife is over and the smoke of battle clears away that we have a big price to pay. We must provide, thru education, research and experimentation, means for stabilizing our civilization along intellectual, commercial and social lines when the war ends.

It is the duty, of course, of every able-bodied young man who can do so to enlist in the service of his country. It will also be the duty of those chosen under the selective draft to respond to their country's call cheerfully and without any hesitation whatever. There is also a well-defined duty for those of us who remain at home. It is our duty to prepare for the great reconstruction period which will follow the present struggle. There will be a mad scramble for world commerce and our nation will need men trained in the commercial and practical walks of life if she is to hold her place in the markets of the world. There will be renewed activities in the realm of science and the higher professions for which we, as a nation, must prepare if we are to hold our place. Our colleges and universities can be of very great service to the country during the present crisis. Their research laboratories may be used, their machine shops may even be used if it becomes necessary, and they are already doing effective work in helping in the campaign for increasing the production of food, but their greatest duty is to maintain their work of education and so shape their courses and curricula that the young men who remain at home may have a maximum of time for direct practical service for their country and at the same time obtain an education which will fit them for a place in the new era which will dawn at the close of the war.

There are thousands upon thousands of young men who are too young to come under the selective draft. With the cry for increased production along all lines which was a natural result of the entry of the United States into the war, renewed activities in commerce and industry present strong temptations to these youths. They see opportunities to earn what appear to them now good salaries and they are liable to be drawn into these activities and remain there until too late to go back and renew their work of obtaining an education. It is the duty of these young men and of their parents, not only to their country but to themselves, to avail themselves of the means at hand for obtaining an education so that they will be ready for their part in their country's future.

A larger opportunity for service, more responsibility, more prominence, a greater personal reward await them if they will prepare themselves for these tasks.

CHARLES A. LORY,
President Colorado Agricultural College.

Wallaces' Farmer sees black in the fact that the Farm Loan board has fixed a uniform rate of interest on loans at 5 per cent because the credit of all the states is back of farm loan bonds, which bonds are to furnish the cash for loans. This worthy journal, smug in its conviction that all good farms and good farming ceases at the east bank of the Missouri river, says:

"In the meantime, the interest rate fixed by the federal farm loan board will force private loan companies to reduce their rates or withdraw from the mortgage business. Very likely they will withdraw from those states in which conditions do not justify a 5 per cent rate, and compete with the government in the sure-crop states. That is, they will let the government carry the bad risks."

What is happening is that the lender, realizing that the day of usury is past because of governmental competion, is applying for farm loan bonds, which will bear 4½ per cent interest and will be exempt from all taxation. The lender will be relieved of all details of making loans and he will still get a fair return on his money.

As for the matter of "bad risks" referred to by our Iowa contemporary, we challenge Iowa to a show down on the comparative success of farming between that state and any of our mountain states, on either irrigated land or non-irrigated land, on the basis of net return per acre. There must be some reason why so many Iowa people have come to Colorado and other mountain states to farm, and we are sure that such a comparison would tell the story.

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Calculating Returns on Milk

A larger portion of our milk supply is being used for the manufacture of cheese and condensed milk this year than in any previous year. The need of condensed milk and cheese for feeding the armies of Europe has created a large demand for these products.

In April, cheese factories paid from 57 to 65 cents a pound for fat and condenseries from 68 to 70 cents. A few creameries paid as high as 50 cents a pound for fat, but the majority paid less.

If returns for milk are measured only by the prices received for fat, the condensery and cheesery gave the best returns. Skim milk is easily worth 60 to 80 cents a hundred for feeding purposes. The creamery patron has the skim milk left on the farm, and out of every 100 pounds of whole milk produced there should be obtained 85 pounds of skim milk, worth from 60 to 80 cents. When the value of the skim milk is added to the returns for fat, the creamery paid as much for fat as the condensery and nearly as much as the cheesery. We estimate whey to be worth one-half the value of skim milk for feeding purposes.

The returns which the farmer receives for his milk must not be measured alone by the price of fat, unless he sells whole milk. But he must ever bear in mind the feeding value of skim milk for calves and growing pigs when selecting a market for his milk. Much corn is wasted in the feeding of swine, because there is a lack of skim milk to supplement it. Well conducted experiments have proven 100 pounds of skim milk to be worth one-half bushel of corn when properly fed to the growing pig. Corn is worth $1.50 per bushel and makes skim milk worth 75 cents per hundred. For rearing of grade dairy calves it is worth more than this.—Hoard's Dairyman.

640-Acre Homestead

We filed on 320 acres of land in Wyoming, but as yet have not received our designation. We want to file on the other 320 of that same section. Would it be wise to establish residence and put in a crop of potatoes before the designation comes? Would you advise our filing on the other half now? Why does it take so long to receive a designation, and why is it some people establish residence immediately after filing?—E. C. B., Brush, Colo.

I assume that you have filed on the 320 acres under the stockraising homestead act of Dec. 29, 1916. An entryman under this act has no right to establish residence on the land entered until it has been designated as stockraising homestead land by the U. S. Land Office. You should file on the additional 320 acres at once and petition your U. S. District Land Office for the designation of the land—the entire 640 acres if you have not already filed a petition for your former entry. There are hundreds of thousands of acres being filed on under this new act and it is impossible for the U. S. Land Office to give prompt attention to each individual filing. Parties establishing residence on entries prior to designation under the above act are exceeding their authority. Write your District Land Office for copy of Circular No. 523, which will give you full particulars.

Comment by Farmer Putnam

OUR MISSOURI FRIEND PLUM DINGFIZZLED OVER WAR EMERGENCY ADVICE

Denvor, June 25, 1917.

BEIN' too old fur the draft, I reckon I got to volunteer to git in the army. It ain't bo cause I m gittin patrloiic, but I've got to go in self-defense. I'm plum dingfizzlod wlth thom side issues of tlls here war and I'm a-goin' to the front so's I kln have a littlo peaco and qulot. Now you'all don't need to thlnk it's my fanuly affairs ag'in. No, mo and Josephine—that's my wife—ls gittin' along as nico as two peas in a pod. We aln't had a set-to fur nigh two months. I reckon it's bocauso I been travelin' around fur Wostern Farm Life, whllo she's beon a runnin' tho ranch, so wo hain't had a fair chanct to quarrel.

I want to interrupt a minit. Some of the folks has been writin' to me askin' why it was that every time I mention Josephine I has to put after it them words—that's my wife. Well, I reckon I better glve a explanation from my past lifo in Missouri, which that dates back to. One time when I was writin' fur tho home papers just snch fool stuff as this paper pays me fur out here, I was a-tellin' about a ornery caff wo had; sho was the contrariest critter I ever seen on any farm and I nachually named her Josephine. Well, in writin' about the caff it went somethin' like this:

"I chased Josephine down the pasture, she jumped the lane fence and the last I seen of her she was a-tearin' down the road with her head in the air and her tail up, goin' like a Kansas cyclone."

Now them words was harmless enough, but some durn fool neighbor tore out that part of it and left my name signed to the bottom of the article and sent the tore piece over to some of my wife's kin folks in Platte county. Pretty soon up bobbed one of 'em ridin' a saddle horse, with a shotgun layin' over his left arm. I seen him come ridin' up and Josephine—that's my wife—run down to the gate to meet him with a "Hello, Bob, llow's all the folks?"

"Purty well," he sez, foolin' with the shotgun, "but how's Tom? Is he just gone crazy, or do I haff to shoot him?"

By hookey, you know we had a awful time explainin' to him that I was a-writin' about the caff and not about Josephine, my wife. We finally got him to git offen the hoss and come in and have dinner, but he sez, on partin':

"Tom, if I was you I would'nt keep makin' a durn fool of myself with that thar writin' business. Some folks is cut out fur it and some ain't. I reckon we'd all feel a heap easier if you'd stick to farmin'."

Not wishin' no further trouble with my wife's folks, I allus made it a rule after that when I wrote about Josephine to put down "that's my wife," and to make sure that they wouldn't be no more cases of mistook identity, I sold the caff. Josephine was a dandy little heifer, too—I mean the caff.

Well, goin' back to the war and what's caused me to wish I was in France. When the war broke out in spring us farmers all hopped in and begin to spend money fur more seed, and tractors and implements, and the more we bought the higher they got. The law of supply and demand, you know. That means when you want somethin' real bad that the other feller has got, it all of a suddent is wuth a hull lot more then it was when nobody didn't want it. It's a funny thing, but so it is, and we cain't change it. Well, things went along alright till they begin to git up committees in town to wish things on the farmers. First it was: "Double your acreage."

Next thing we knowed it was: "Don't double your acreage; raise more and better crops on what you're farmin' now." Next thing: "Grow more food crops; the farmers of America must feed the world." Next thing: "Don't put so much land in food crops; raise more forage, or the cattle will starve." Next thing: "Grow more sugar beets; the entire world is short of sugar." Next thing: "Cut out the sugar beets; give us more wheat; the world needs bread." Next thing: "Everybody must grow beans." Next thing: "Don't grow so many beans; put in more silage crops." Next thing: "All farmers invited to come to town to attend a meeting to talk about war production." Next thing: "Every farmer should buy a Liberty bond." And now it's "Help the Red Cross."

It makes my head dizzy and consequence is I don't know where to begin or what to do. I reckon I'm a good deal like the darkey. When he got married he begin to complain about his wife all the time wantin' money. He sez: "Fust she asts me fur two bits; next day she wants fifty cents; then she wants a dollah; next a ten dollah bill."

"Well, what does she do with all the money?"

"Oh, I dunno," sez the darkey, "I hain't nevah gin her none yet."

That's my fix. I've got so much advice that I didn't take any of it, but kept right on—that is Josephine and the boys did—puttin' in the reg'lar crops and hopin' it wouldn't frost after they come up. I reckon that's the safe plan. Not that I'm ag'in any of them things that's bein' advocated. Not a tall. I sez to my neighbors: "Let them city folks alone; they're happiest when they're hollerin' loudest."

That reminds me. I got a letter the other day from Gad Barney down to Haswell about the daylight savin' plan. He sez he wants to know how it works out. "Every ounce of daylight and some of the moonlight is accounted for on this place," he writes. "And if there is any possible way to save some more daylight I want to know how it is done."

I was readin' in one of the papers the other day which said that if the daylight savin' bill is passed by congress and everybody has to move the clock a hour ahead, it will help increase production on the farm. Gad Barney and you other fellers out on the plains and up in the hills knows how funny that sounds. Why if you fellers was to move the clock up and git out of bed a hour earlier then you do now you'd meet yourself goin' to bed. Talk about the farmer settin' the clock ahead to save daylight! Most city folks is just droppin' off to sleep when us fellers on the farm is primin' the gas engine to start the milkin' machine, or runnin' the bucket down the pit silo, or pitchin' fodder into the feed racks. I kin offer a dollar a piece to every city feller that's seen the sun rise three times this summer (exceptin' them nights he was out late), and never lose a nickel. The same time, if they is any way to git longer hours fur the farmers the city folks is goin' to try to help us git the bill thru congress. I hope they pass the law; it'll give some of us a chanct to sleep till 5 o'clock, which we never kin do unless we move the clock a hour ahead.

THOMAS JEFFERSON PUTNAM.

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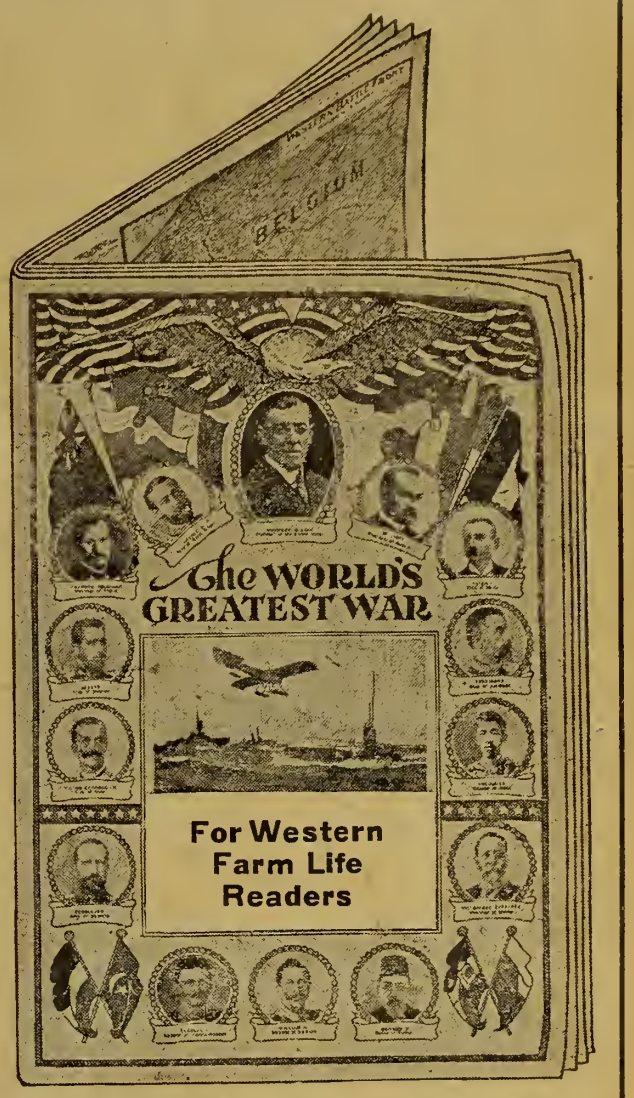

Six Thousand Soldiers to Participate in Cheyenne Frontier Days

War and rumors of war which this year are exercising a demoralizing effect upon customary public celebrations have but served to stimulate interest in Cheyenne's Frontier Days celebration, the great cowboy festival which is hold annually at the Wyoming capital, which this yoar is to be combined with a remarkable historical and military pageant inspired by, and inspiring to, the spirit of patriotism which is firing the nation. Six thousand regular soldiers are stationed at Fort Russell, the largest military post in the United States, which is adjacent to Cheyenne, and this entire garrison is to participate in the military features of Frontier Days, in addition to National Guardsmen, representatives of the Marine Corps, Boy Scouts and High School Cadets, the latter trained under the famous Steever system. The inspiring and instructive military features of the six-day show, July 23 to 28, both inclusive, are to be in addition to the customary world's championship broncho busting and steer roping contests and the usual other wild west features of Rangeland's most picturesque and most thrilling festival. Cheyenne is fifty years old this summer and will celebrate its golden anniversary during Frontier week, a historical pageant showing tho progress of the West from 1867 to 1917 being an outstanding feature of the Golden Jubilee. Interest ls added by the fact that Frontler Days will be repeated this year for the twenty-first time, making it the oldest continuous celebration held wost of the Mississlppi river.

Two Cuttings of Sudan

In tho spring of 1916 I sowed to Sudan grass two small point lands that I did not care to plant to corn, just for the experiment. I used my grain drill for planting, but put the seed thru tho alfalfa seeder which was all right, but the seed would clog in the small spouts leading to the main boot, so my stand was not uniform and did not give me the best results. However, I had quite a crop of feed, much of it stood higher than my horses' backs when I cut the first crop. I want to say right here that owing to number of small showers I had some trouble in curing my first crop, before the new growth was up enough to keep it damp.

The second crop was not quite so tall and made a better quality of hay. I have not found any hay that my stock would eat better than Sudan hay. As to its feeding value as compared with alfalfa, I am not in a position to say, but I prefer it to poor alfalfa hay.

I would like to put in about eight or ten acres this spring, but tho price of seed seems to be prohibitive. I would cut one crop of hay and then uso it for fall pasture.—W. E. Pilcher in Boulder County Farmer's Exchange Bulletin.

Swelling in Pregnancy

What can be done for a mare that has the milk fever? It started five weeks before the mare dropped the colt. The bag swelled up, starting on the belly, and the legs swelled up, too.—H. G., Berthoud, Colo.

Obstruction to the venous circulation from pressure during the last few weeks of pregnancy causes, in some cases, considerable swelling of the legs and the under side of the belly. It is not milk-fever or any specific disease condition and seldom is any treatment indicated beyond exercise. The swellings gradually disappear after the colt is born.—G. H. Glover.

Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and thru the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Cutting a Magpie's Tongue

Answer to Geo. Yanahori: Regarding the cutting of a magpie's tongue. This cutting is done on the under side between the tongue and the lower part of the mouth, for the purpose of giving a freer motion to the tongue. However, this operation is unnecessary, as magpies, when taken young and domesticated, readily learn to talk.—W. L. Burnett, Deputy State Entomologist.

Harness Galls

Answer to G. C. S., New Mexico: Sore shoulders and neck, or galls, are usually due to ill fitting collars or poorly adjusted harness, thru which the load is unevenly divided. Animals are especially subject to harness galls when first out on heavy work in the spring. See that the collar fits. Wash the affected parts two or three times a day in warm water and apply oxide of zinc ointment where the skin is broken. Felt shoulder pads sometimes help, but they must be carefully adjusted. If not put in the right place they are apt to cause additional irritation.

Milk Is Slimy

What is the cause of milk making my dishwater slimy? When I wash my milk dishes the water gets just like fish slime. We have one fresh cow that has been giving milk for four or five months. Will you please tell me the cause? Can you tell what is the cause of a cow giving thick milk? Only been giving milk about seven months; not with calf.—T. K., Idaho.

Slimy or ropy milk is caused by bacterial infection. The type of bacteria causing this condition is not harmful, and the milk is safe to use. Try washing the cow's udder with water with a little chloride of lime in it, and disinfect the room where milk is kept with the same solution. Sterilize your milk vessels thoroughly with boiling water after washing. We do not know just how or when these bacteria may gain access to the milk, but they are sometimes found in hay dust.

Amended Homestead

I filed on 320 acres in 1913, have 40 acres or more broken, have 240 acres fenced, a good frame house and a good frame barn, both on cement foundations. Have lived here all the time except two leaves of absence from land office, but the resurvey threw my buildings off my land. When I was building thought that I was building on my land. Is my land subject to contest or not? Will I have to move my buildings onto my land before I can prove up? Is a mule allowed to run at large?—O. M. G., Colorado.

Your homestead is not subject to contest, inasmuch as you have lived on it in good faith. Write the U. S. Land Office of your district, Sterling, Colo., stating particulars in full, also giving legal description, and it is possible that they will allow you to make an amended entry so that you can include your improvements.

There is no law in Colorado against mules running at large.

Additional Homestead

(1) A proved up on 160 acres of land here in Cheyenne county, then moved away. Several years later he filed on the quarter that joined his original 160 acres and has a neighbor doing his farming on the last quarter. Can he prove up on the last 160 acres and not live on either quarter?

(2) Can A compel a sheepowner to keep his sheep off of A's land that is not fenced?

(3) A's and B's houses are both close to the line that divides their land. Must A tolerate B's chickens coming over his place and scratching on A's feed stacks? A hasn't any chickens and can keep his stock away from his feed by the use of barbed wire. Must he fence against B's chickens?—H. G., Cheyenne Co., Colo.

A can prove up on his additional homestead entry without residing on either quarter and without farming same in person.

(2) There is no law in Colorado restraining sheep from running at large.

(3) There is no law restraining chickens from running at large and A must either fence against B's chickens or suffer the consequences.

How to Cure Pork

Please tell me how to cure pork to keep during the summer months.—Mrs. M. E. C., Purcell, Colo.

The following is the recipe for making Virginia hams and bacon, the best to be had: First cool the meat thoroly before salting. For each 100 pounds of hams, shoulders and bacon take three-quarts of pure, high-grade salt, 6 ounces brown sugar, 2 to 4 ounces fresh ground black pepper, and 2 ounces saltpeter. Mix the salt, sugar and pepper thoroly, then dissolve saltpeter in a little warm water, add to the salt, sugar and pepper and mix thoroly.

Spread the meat on a board in a cool, dry place where flies cannot get to it and rub each piece thoroly with the salting mixture. After two days rub a second time and at the end of four or five days rub again, being sure that the salt is well rubbed into the shanks of the hams and shoulders. After at least four rubbings sprinkle considerable clean salt over the meat and let stand ten days to three weeks to take the salt. Sometimes the meat is packed in a box during this period with plenty of salt around it. Do not pack meat in box at first, as the animal heat does not all get out of it for days. It is the animal heat remaining in the center of the hams and shoulders that causes them to spoil. When sufficiently salted remove the meat and wash thoroly in clean, cold water to remove the surplus salt, then hang in the smokehouse and smoke slowly for ten days with hickory, oak or other hard wood. In the absence of hard wood use corncobs, but in any event do not allow a blaze, but a smoldering fire. Hardwood sawdust is excellent for smothering the fire. After smoking paint the hams, shoulders and bacon over with a mixture of molasses and plenty of both black and cayenne pepper to protect from skippers. Wrap with cheese cloth or thin muslin and hang in a cool, dry place until wanted for use.

Legal Questions

The following questions regarding legal matters have been answered by Peters & Barker, attorneys-at-law, Equitable building, Denver, Colo.

A buys a farm and has the deed made to his wife, B. What equity has A in the farm? Can either party sell the land or any part of it without the consent of the other party? Can A compel his wife to deed him half or any part of the farm?—E. F. M., Bent County, Colo.

Should A buy a farm and have the deed made out to his wife, B, the general rule would be that A has no interest in the farm; that his wife B could sell it without his consent; and that A could not bring an action against his wife to compel her to deed him a half or any other interest in the farm. Since it is the duty of a man to support his wife, the law presumes that in having her named as grantee in the deed the husband intended to make a gift of the property to his wife, and, unless it can be shown by full, clear and convincing proof, that, at the time of purchasing the land, it was the intention of the husband that the wife should hold the property in trust for him, the property becomes the separate estate of the wife. Of course, a conveyance to a wife, merely for the purpose of delaying, hindering or defrauding a man's creditors, would convey nothing and could be set aside by the man's creditors. But the husband himself could not have such a conveyance set aside, for the reason that the court would give him no relief in view of his wrongful conduct.

Partition Fence Law

I bought a quarter of land in Logan county and the fence belongs to me. The quarter adjoining me was bought by another man. Can I take my fence out without notifying him? Can I choose my half of the fence? If he don't put in his partition fence and his stock comes on my crops what steps can I take? If my stock goes on his land thru his half of the line fence, what can be done about it?—B. E., Fleming, Colo.

If you own the fence, and the fence is erected on your own land, you may remove it without notice. But if the fence is a partition fence, before you will be permitted to remove it, notice will have to be given to the adjoining owner, and if he does not pay you one-half the value of the partition fence within one year after receiving the notice, you will be permitted to remove the same.

Husband Need Not Sign

I have bought a quarter section here in New Mexico from a woman who lives in Missouri. Her husband deeded this place to her some time after he proved up on it. They have not lived on it for four years. The question is, will it be necessary for her husband to sign the deed?—W. A. S., Logan, N. M.

It is not necessary for the husband to sign the deed.

Fencing Government Land

Does a party become owner of land by reason of having it fenced for twenty-five years? For instance, A files on government land thirty years ago and fences it up five years ago. B files on government land adjoining it and finds A's fence is over on B's land. B notified A to move fence to line. A does not do it but sells the land to C. Now C refuses to allow the fence moved and declares his intention of holding the piece of land on the ground that it has been fenced for twenty-five years, which is true; but as it was government land and no one to object where A's fence was until 1909, what can B do to get fence on line and possession of his land? Can B hold C for damages for loss of crop on land in question?—E. E. P., Hoehne, Colo.

No man can acquire any right by adverse possession against the government. B can bring an action in unlawful detainer, under Section 2665 of Colorado Statutes Annotated, recover triple the amount of damages sustained.

Veterinary Inquiries

Thumps in Pigs, Etc.

Answer to C. J. E., Wolf Creek, Colo., thumps in pigs; also hardening of the skin in old hogs:

Hardening of the skin (Scleroderma) is a disease of swine, and is more likely to affect old boars. The thickening of the skin results from squamous eczema and not from external parasites. Parasites, like any other irritation, would probably cause this condition could the animal live long enough. Stimulation of the skin by irritation, or otherwise, causes the proliferation of scales (dandruff) which sometimes accumulate in a horny growth. A good illustration of this is the horny tumor that sometimes grows where an animal has been branded. This tendency (cornification) may cause a hardening of the skin over the entire body, or in spots only, depending upon the nature and extent of the irritant. There is no cure for the disease and unless perchance it should be caused by parasites, it is not infectious.

"Thumps" in animals may be caused by either palpitation of the heart or spasm of the diaphragm. It is common symptom in hog cholera and other diseases that affect the vagus nerve. What is usually meant by "thumps" is a disease of little pigs that is caused by improper care of the mother before the pigs are born. Do not feed a sow on heavy feed and keep her confined in a small pen for a month before the pigs are born. They will be almost sure to have the thumps if you do, and almost sure not to have them if you don't. There is no way to save the pigs after they begin to thump. Keep brood sows in a large pasture with plenty of coarse laxative food and they will give birth easily, will not eat their pigs, nor trample on them, and the pigs will not have the thumps.—G. H. Glover, Colorado Agricultural College.

Rabbits Are Dying

I would like to have you tell me if you could, what makes rabbits die off when they get about six weeks old. They lie down and can't get up. Their heads draw back and they lie in kind of a stupor. I have never had a rabbit get over it. They are kept in a hutch about two to three feet long and two feet wide.—M. O. P., Scholl, Colo.

There are several infectious diseases of rabbits and it is impossible to state just which one is the cause of death in this instance. There seem to be no animals, not even guinea pigs, that are so hard to keep free from infections, as rabbits. The hutches should be changed on to new ground frequently and rabbits given plenty of room for exercise. Use disinfectants freely and clean hutches every day. There is no use trying to treat rabbits after they get sick and there is no specific that will keep disease away save the proper care in management.—G. H. Glover.

Cows Fail to Conceive

I have two cows out of a herd that did not get with calf last year. I would like to know if there is anything that can be done for them? One of my neighbors did not get any of his with calf at all. Is it a disease?—F. W. C., Carr, Colo.

Sometimes cows that are served normally fail to conceive. It is impossible to give the reason in any particular case without knowing all the circumstances. However, a very common cause of barrenness, providing the bulls are in good condition, is lack of sufficient nutrition for the cows. This is often the case where the cows run on the range most of the winter. On the other hand, overfeeding and lack of exercise sometimes bring on the same result. Another cause is undue sexual excitement at the most active stage of heat. In other words, cows must be in normal health, and have intelligent care, avoiding both over feeding and under feeding. They may be troubled with derangement of the sex organs, diseased ovaries, or some other internal trouble. After cows have once missed a season they are often difficult to impregnate. If the trouble is common in the herds in your neighborhood, call a competent veterinarian to make an investigation.

Pigs Have "Sore Mouth"

I have been having some trouble with my shoats. They have growth come on their nose —sometimes under the nose and below the eye. Sometimes when I open them there is pus and

(Continued on page 13)

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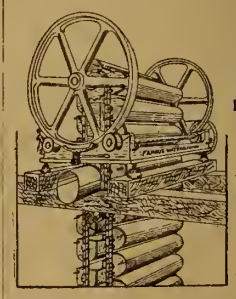

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Dairying and Hog Raising

GEO. E. MORTON

Free advice on the commercial or technical features of dairy farming and hog production. Please address your letters to DAIRY DEPARTMENT, WESTERN FARM LIFE, DENVER, COLO.

It is the duty of every man growing hogs this year to push them along on forage crops while he can, so that large amounts of grain will not be needed for finishing. Grain will be high in price, and as much of it as possible should be saved for human food. Alfalfa, skim milk and barley, milo or corn to the extent of 1 to 2 per cent of the live weight, constitute an ideal ration.

Non-Breeding Milk Cows

Answer H. R. R.:

The swollen udder and bloody milk probably were due to an injury to the udder or recurrent congestion resulting in a gargoty condition. Little can be done for the udder when this condition has existed for some time. There probably is no connection between this and the failure to breed. Failure to breed is frequently the result of encysted ovaries, a condition which can sometimes be remedied by a good veterinarian by crushing the cysts on the ovaries. Shy breeding seems to be connected with a disease known as granular vaginitis which is becoming more prevalent in our western herds of late years. Pin head points of inflammation, fiery red in color, appearing upon the lining of the vagina indicate the disease. The only thing you can do is keep rebreeding till you catch her. My advice in the case of this cow would be to beef her while beef prices are good, as the two troubles named are likely to prevent her ever again becoming a paying dairy cow.

Wants Registered Stuff

I should be pleased to have you advise me where I can buy some good Jersey calves. I want good registered stuff. What should I have to pay for stuff of that kind? I should be very thankful for any assistance you can give me in procuring a good male calf and possibly one or two heifers. At present I am milking four cows, two of which are grade Jerseys. The other two are mixed Jerseys and Shorthorn and Jersey and Whiteface, and since Jan. 1 to May 31 I have sold over $220.30 worth of butterfat. What I have in mind is to get a good male calf to breed on these cows and possibly some registered heifer calves and grow into pure bred stuff that way. Is that the proper thing for me to do? I will also add that these cows furnished milk and butter for a family of six.—E. H.

Ans.: With regard to the inquiry for Jersey calves, you can get heifer calves at $50 and up and bull calves at $40 and up. If you buy registered stock you should get good stock to start with, as you will be much farther advanced in five or ten years' time. If I were you I would buy heifers that are out of advanced registry dam and are of fairly good type, and you will have to pay $150 or $200 and up for yearlings. You can probably get a bull calf out of fairly good advanced registry dams for $200 or $250.

Dairy News Notes

The Equity Union has purchased the Morgan Creamery and expects to enlarge it to handle cream from a large district. Cold storage for eggs and produce will be added. If the plant is made as modern as the Equity Union Creamery at Limon it will be a credit to the state.

The Hoehne Co-operative Creamery is putting in a cheese outfit and will make cheese during a part of the year.

Sixty grade Holstein dairy cows have arrived in Las Animas and been distributed among the farmers. Mr. Chas. E. Smith, county agent, secured the orders, and Mr. McCann, deputy dairy commissioner, selected the cows in Wisconsin. Two registered bulls came with the shipment. The Trinidad Commercial Club is furnishing the money for those needing loans to purchase.

The cities of Silverton and Sugar City are making arrangements for inspection of their milk supplies. Mr. H. E. Nevius has visited both cities to inspect and help with the preparation of ordinances covering milk inspection.

Dairying Preserves Fertility

The farmer is selling his soil fertility when he sells crops and hauls them from the land. Under these conditions no farm can produce year in and year out without finally reaching the point where the fertility becomes limited. The following table shows the value of fertility that is sold in crops as compared with that sold in milk and butter:

1 bushel of wheat, including the straw	$ 0.26
1 bushel of corn, including the fodder	.37
1 bushel of oats, including the straw	.32
1 ton of alfalfa hay	9.50
1 ton of clover hay	9.07
1 ton of cow pea hay	7.96
1 ton of cotton seed	18.80
1 ton of butter	.50
1 ton of milk	2.09
1 ton of cream	.66
1 ton of cheese	14.19

When crops are sold and hauled away, part of the producing power of the farm, the fertility, is unconsciously included. When livestock or dairy products are sold, then only a small part of the plant food removed by crops is sold; the greater part of this fertility is left behind in the form of barnyard manure. The feeds raised on the farm are not only utilized in this way, but profitable dairying often calls for the purchasing of feeds from the outside; then these, too, add to the fertility supply left behind. A ton of cotton seed meal or a ton of bran, for example, brings to the farm fully one-half as much value in fertilizing materials as their first cost for feeding purposes. The dairy cow returns from 75 per cent to 90 per cent of the fertilizing value of the feeds she consumes to the land in the form of manure.—H. M. Bainer, Agricultural Agent, Santa Fe Railway.

Dairy Products Cheapest Food

"Do not buy meat until you have bought three quarts of milk a day," is the advice of one of the foremost American authorities on nutrition. This applies to a family of two adults and three children.

The advice is good, according to L. S. Palmer of the Missouri College of Agriculture, because milk at 9 cents a quart, butter at 45 cents a pound, cheese at 30 cents a pound and cottage cheese at 15 cents a pound are still by far the cheapest human foods from animal sources.

The ration per individual for the civilian need not exceed 2,500 calories of energy and 2.5 ounces of protein a day, according to the British Food Controller in a statement published Feb. 1, 1917. Three and one-half quarts of milk, or one pound, three and one-half ounces of cheese, costing 32½ and 36½ cents, respectively, will furnish this amount of energy, whereas it would be necessary to buy nearly two pounds of the cheapest cut of fresh pork, containing considerable fat, at a cost of 45 to 50 cents, to obtain 2,500 calories of energy.

As an economical source of protein it is interesting to find that 10 cents worth of cottage cheese, 16½ cents worth of cheddar cheese and 18 cents worth of milk, at the foregoing prices per pound will furnish 2.5 ounces of protein. The cheapest meat protein one can buy is lean veal steak, and it is necessary to buy 25 cents worth to obtain 2.5 ounces of protein. Eggs at 35 cents a dozen are practically on a par with lean veal. Nine eggs are required to furnish 2.5 ounces of protein.

In addition to their economy, dairy products have the following points in their favor: (1) There is no waste connected with their use in the household; (2) they contain valuable salts; (3) they contain other invaluable food substances which many other foods contain either in much smaller quantities or not at all.

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2nd If you have a very old De Laval or an inferior separator of any kind—

BECAUSE THE LOSSES OF THE poor separator from incomplete skimming and the tainted product of the hard-to-clean and insanitary separator are the greatest at this season.

BECAUSE OF THE GREAT economy of time at this season in having a separator of ample capacity to do the work so much more quickly.

BECAUSE THE NEW DE LAVAL is so much simpler and more easily handled and cared for than any other, and you cannot afford to waste time these busy days "fussing" with a machine that ought to have been thrown on the junk-pile long ago.

BECAUSE THE DE LAVAL SEPARATOR of to-day is just as superior to other separators as the best of other separators to gravity setting, and every feature of De Laval superiority counts for most during the hot summer months.

These are all facts every De Laval local agent is glad of the opportunity to prove to any prospective buyer. If you don't know the nearest De Laval agency simply write the nearest main office, as below.

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The Farm Home

MRS. H. T. FRENCH

Questions about home problems promptly answered by letter and thru the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

ENLISTED—Truly every woman, young and older, has enlisted in some worthy cause that will show her love for home and country. The first awful shock that came with the realization of war conditions is passing, or losing its deadening effect, and in its place comes that faith and assurance in the triumph of honest work and unity of purpose. Right where the sad circumstances find us we shall make the fight for better living.

Whether hoeing in our gardens, or planning the preservation of the garden's yield, we are serving our country, knowing that our neighbors are a little nearer, now that all are interested in the same line of effort—to aid the advancement of improved health and happiness, larger satisfaction and contentment in home and community life, all humanity coming in for a share in our sympathies.

"The common problem, yours, mine, everyone's, is not to fancy what were fair in life, provided it could be—but finding first what may be, then find how to make it fair, up to our means; a very different thing."

Not all at once, but little by little shall the mind accustom itself to new and changed conditions, its new method of looking at things—and with these changed and enlarged views of our privileges, opportunities, duties and responsibilities our horizon is widened, our world made new. And as we bring our intelligence to bear upon our home duties, once so irksome, they become a part of the great moral and patriotic order of the universe.

Reducing the Cost of Living

"Hey diddle diddle,
The cook has a riddle,
With prices as high as the moon,
When her purse keeps small
And hungry folks all
Still eat, night, morning and noon."

The above little jingle pops up in my memory, tho read from an article by Eleanor Robbins Wilson some years ago; and now, when we would reduce the cost of living without impairing health or efficiency, the problem is a somewhat puzzling one.

July is a month when we may try the diet-reducing method of keeping cool, eliminating the foods that are rich in carbonaceous or heat-producing principles, which fan into flame the internal heat of the body and render it an easy prey to the external heat. The bowl of oatmeal, the dish of chops and the hot cakes which were so grateful on a cold morning because they fortify against external cold should, for this reason, be supplanted during the hot months by an equally nourishing but less stimulating menu of fresh fruit, eggs, milks and similar foods that are easy to digest and assimilate. As with the breakfast so with the other meals of the day, a light luncheon to tide over the working hours, then a nourishing but easily digested dinner of succulent vegetables and seasonable fruits at the close of the day. When practicable, meats should be wholly eliminated from the hot weather diet, but when habit is fixed it is hard to do.

Vegetarian Diet

When meat is dropped from the dietary some other food rich in nitrogenous matter must take its place. We find this in greatest abundance in the legume or pulse family—peas, beans, lentils, etc., when they are used in the ripe, dry state. While green peas are delicious, they do not contain the amount of nutrition that is found in them when ripened. Dried legumes require preliminary soaking, followed by slow cooking until tender, when they may be prepared in many ways.

A Meat Substitute

Try making croquettes or cutlets from some of the legumes. Drain them after cooking, press thru a sieve, moisten each pint with two well beaten eggs, two tablespoons melted butter, a few tablespoons of thick, sweet cream and any preferred seasoning as onion juice, herbs, chopped parsley, etc. Mold and bread, fry golden brown in deep, hot fat.

Vegetable Menus

No. 1

Lentil Roll Brown Gravy
Asparagus (buttered)
Lettuce salad Wafers
Ice Cream Small Cakes

No. 2

Ragout of Early Vegetables
Boiled Rice Cauliflower
String Bean Salad
Wafers Iced Tea Cheese

No. 3

Egg Cutlets Cream Sauce
Stuffed Eggplant
Sliced Tomatoes and Mayonnaise
Fruit Nuts Coffee

To read, to think, to love, to hope, to pray—these are the things that make men happy.—Ruskin.

Question: Please publish a short article on salads.

Ans.: The salad is not necessarily a combination of indigestible vegetables and irritating condiments. Most palatable and inexpensive salads may be made from luscious fruits and crisp, easily digestible vegetables, with no mustard, pepper or vinegar. Since acids hinder the digestion of starch, the vegetables must, of course, be those without starch, such as lettuce, endive, asparagus, celery, cabbage, cauliflower, cucumbers, radishes, carrots and beets. The potato being composed almost wholly of starch, ought seldom if ever to be used in salads. Salads made of suitable vegetables or fruit are a valuable part of the dietary, in that they furnish the bulk which satisfies without burdening the digestive apparatus with too large quantities of proteids.

Nuts, so much used in salads, are nutritious, and the reason many people say they do not agree with them is that they are eating more nuts and nut preparations than their system can take care of. It is a fact of science that the system will make good use of only about one-sixth of the amount of nitrogenous as of the carbonaceous elements of food.

Fruit salads may be served as the middle course of the dinner, or as a dessert, or as the principal dish of a simple luncheon.

Lettuce, the most universally used of salad plants, should be crisp, and if you grow it, there is no reason why it should not be so the entire season. After it is gathered keep it in a cool place, but not where the wind will blow on it. An hour or two before serving it should be looked over, wash and put into a pan of ice water to remain until served.

Many recipes for salads and salad dressings should be collected by housewives and this department will be glad to publish those asked for, or furnished by our readers.

Make Your Own Lard

Lard is 30 cents a pound. Many folks object to paying that much but realize that at the present price of hogs and with the probable future demand it is unlikely that the price will be reduced soon. It becomes important, then, to find a cheaper satisfactory substitute. Dr. Louise Stanley of the Missouri College of Agriculture suggests that housewives consider suet as a source of cheap fat. Suet has not been as extensively used as lard on account of its harder consistency. It can be obtained at about 10 cents a pound. From this can be obtained 14 ounces of pure fat at a cost of 12 cents a pound. In order to bring this to the consistency of lard it is only necessary to add oil in the proportion of one part of oil to two parts of suet. This gives a compound fat which is very satisfactory for general household use. Cottonseed oil or corn oil can now be obtained at about 21 cents a pound. In the basis of the above proportions a satisfactory lard substitute can be had at a cost of 15 cents a pound.

Some Used Recipes

Stew No. 1—Pick the flesh from the bones, put it over fire to simmer with an onion, a carrot or two, potatoes, a tomato and a variety of soup herbs. When the vegetables are cooked, thicken the mixture with a little flour, season to taste and send to the table with a rice border.

Stew No. 2—When impossible, financially or otherwise, to procure the necessary quantity of meat to make a stew, a substitute may be provided as follows: Boil potatoes until tender, then peel and slice them and put them into a stew pan with two or three sliced onions, a bay leaf, and a thin slice of salt pork that has been cut into small strips. Cover these vegetables with any leftover soup or stock and allow them to simmer for an hour, when the gravy has become thick. When appropriately seasoned with salt and pepper this dish proves very satisfactory.

Meat Pie—To make a meat pie a friend took some scraps of beef, mutton and chicken. The beef was left from a pot roast, the mutton from a stew, and the chicken from the Sunday waste. These were chopped fine after removing all bone and gristle. Two small onions, salt and pepper and dried celery leaves, a miscellaneous collection of vegetables, a cup of cold boiled rice, were added. Over this mixture was poured the mixture remaining from the mutton stew, the gravy from the pot roast, thinning them with the necessary quantity of boiling water. The pot was then covered and the contents were left to cook slowly until it was time to add the dumplings, which can take the place of a biscuit crust when one prefers the potpie rather than the one baked in the oven.

Meat Ball Stew—Season 1 lb. raw chopped beef to taste and roll into 12 small balls. Drop into boiling salted water and simmer for 15 minutes, add one-third cup washed rice and boil until the rice is soft.

Hash with Dressing—One pint chopped beef or mutton, cooked or uncooked; season with salt and pepper, moisten with 1 cup gravy or 1 cup hot water or broth thickened with 2 tablespoons flour mixed with 2 tablespoons cold water. Place in a shallow, well oiled baking dish, spread over the top 2 onions cut in slices and cooked in boiling salted water until tender. Prepare a dressing from 1 cup bread crumbs and 2 tablespoons melted butter or drippings; season with salt and pepper, spread over the onions, and bake in a moderate oven 20 minutes.

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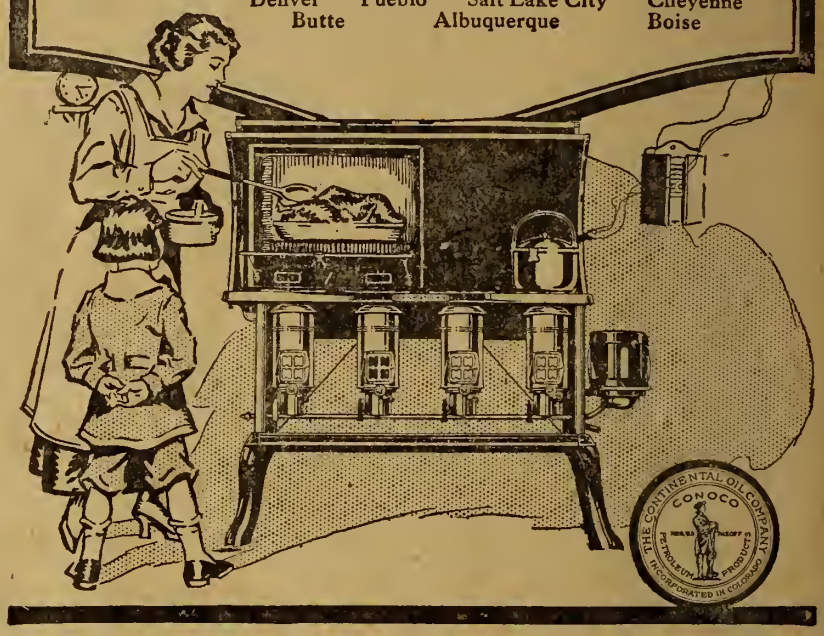

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2121. Pretty Dress for the School Girl.—Cut in sizes 12, 14 and 16 years. Requires 5⅛ yards 32-inch material for size 14. Brown linen, embroidered in colors, was used for this model. The model is made with a long waist, somewhat on moyenage lines. The plaited skirt is gored. The sleeves may be made in the new bell shape, or finished at wrist length, with a smart tab.

1784. Neat Blouse Dress for Mother's Girl.—Cut in sizes 6, 8, 10 and 12 years. Requires 3¼ yards 44-inch material for 10-year size. Serge, repp, drill, linen or poplin could be used for the skirt, and crepe, batiste or lawn for the blouse. The entire dress may be of one material. The skirt is buttoned to the blouse at the belt. Plaid gingham, in brown and blue tones, would be nice for this skirt, with white linen for the blouse, and collar and cuffs of the plaid. Khaki cloth is also good for the skirt, and tub silk or voile for the blouse.

Pretty Summer Gown.—Waist 2109, Skirt 2110. The waist is cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. The skirt in sizes 22, 24, 26, 28, 30, 32 and 34 inches waist measure. Requires 7⅝ yards 44-inch material for entire dress in medium size. The skirt is smart with its gathered tunic. The waist closing is at the side under the plait. Novelty silk, foulard, shantung, crepe or satin, linen or gingham could be used for the dress. It is also nice for bordered goods. This illustration calls for TWO separate patterns, which will be mailed to any address on receipt of 10 cents FOR EACH pattern in silver or stamps.

2115. Splendid "Cover-all" Style. Cut in sizes Small, Medium, Large and Extra Large. Requires 5¾ yards 36-inch material for medium size. This apron may serve very well as a house dress, and with the "cool" neck and sleeve, is especially attractive for warm weather. The pattern is nice for chambray, gingham, linen, drill, percale, alpaca, jean or sateen.

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Profitable Farm Poultry

W. E. VAPLON

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries Poultry Department, Western Farm Life, Denver, Colorado.

On the United States Department of Agriculture experiment farm excellent egg-laying results were secured with a wheatless ration. Thirty Leghorn pullets to which this ration has been fed for one and one-half years produced an average of 147.3 eggs per hen for the pullet year. This compares favorably with egg yields secured on other rations containing wheat, and therefore more expensive. This pen, moreover, during the first sixteen weeks of its second year has averaged 28.5 eggs per hen, 17.5 eggs per hen being produced in March.

The same wheatless ration has been fed since last November to a pen of Buff Orpington pullets which have laid 53 eggs per hen in twenty weeks, and holds the highest egg record of any of the large feeding pens of pullets at the farm this year. Two other pens, however, are less than 1 egg per hen behind this pen.

The ration used was as follows:

Scratch mixture:

Two pounds cracked corn; 1 pound oats.

Dry mash:

Three pounds cornmeal, 1 pound beef scrap.

The scratch mixture was fed sparingly so that the hens ate about equal parts of this mixture and of the dry mash. The total grain consumption of feed for the year was 52 pounds, of which 26 pounds was scratch mixture. Thruout the year it took 4.6 pounds of feed to produce a dozen eggs.

This scratch mixture, with wheat $2.57, cracked corn $1.35 and oats 70 cents per bushel, is 49 cents per hundred pounds cheaper than the regular mixture of equal parts cracked corn, wheat and oats. Another mash which is slightly cheaper than this one is made of 4 per cent each bran and middlings, 26 per cent beef scrap and 66 per cent cornmeal.

If the wheat is omitted from the ration it is very essential to feed a considerable proportion of beef scrap in the mash, but with present prices, beef scrap is one of the cheapest poultry feeds, considering its high protein content.

These experiments, the specialists say, prove that wheat is not essential in an egg-laying ration and that excellent results can be secured by using corn and oats as a scratch mixture, provided this is fed with a good mash containing 25 per cent beef scrap.

Diphtheritic Roup

I would like to have some information about my chickens. They will be all right in the evening but in the morning some will be blind, head swollen and thick, cheesy stuff will accumulate in their eyes. The chicken appears healthy otherwise but as it is unable to see, I kill them. I do not think it is roup.—W. S., Orchard, Colo.

I am unable to tell you what the trouble is from your description, but it seems to us that it might be something in the nature of poison, the chicks possibly getting among poisonous weeds, if as you say, it is not roup in some form. If chicks have a thick cheesy matter in the mouth and throat, we might think it to be diphtheritic roup.

Blood Clot in Egg

What can be the cause that some of the eggs which I sell to my customers have a clot of blood in them the size of a hazelnut, just between the yoke and the white of the egg?—F. E. H., Denver.

The trouble you mention, that of a blood clot in the egg, is probably caused by the rupture of a blood vessel in the oviduct. It is not uncommon and so far as we know there is no cure for the trouble.. The only thing you can do to help the matter is to find the hen laying the eggs and dispose of her. Poultrymen supplying a fancy trade, as you know, candle all eggs sent out, even tho strictly fresh, because in any large flock will be found one or more hens laying eggs such as you mention. Undoubtedly the eggs are good to use, but the appearance is against the sale and people naturally object to finding such eggs when buying.

Runs for Setting Hens

We have a Plymouth Rock cockerel one year old that has dry sores on his legs and feet. Kindly tell me what to do. Also advise me as to the best nests for laying hens and plans for runs for setting hens.—H. W. S., Caldwell, Ida.

In the issue of the Western Farm Life of March 15th is found a picture of what is known as the Natural Hen Incubator, which is the best device I know of for the saving of labor in caring for setting hens. One of the oldest breeders in Colorado uses nests built along the wall, like book-shelves, one row of nests above another. This way of setting hens saves much floor space but requires that each hen be lifted from the nest each morning to feed her. So far as the hatches are concerned, they are as good as tho they were set on the ground.

It is impossible to tell what disease it is that has troubled your Plymouth Rock cockerel. Some of our plains farmers have had a good deal of trouble with sores on the feet and legs and faces of baby chicks, but I have never known this same trouble to attack grown fowls. I would suggest that you get in touch with your agricultural college. Possibly the veterinary department there could determine the trouble for you.

3,000 Hens on 5 Acres

I want to raise poultry; have ten acres, five in truck patch and balance in pasture. How many chickens could I keep on five acres to good advantage, with good houses, good water and some range of about ten acres? Also, what is the best breed for egg production and market use? Also give me the address of a good reliable poultryman, so I can get pure-bred fowls.—A. B. C., Koehler, N. M.

Many poultrymen are keeping as many as 3,000 hens on five acres. Some are doing better than this. The amount of acreage is not the determining factor so much as the condition in which this ground is kept. It is never safe to keep fowls on the same piece of ground year after year. Part of the ground should be cropped each year so that the fowls have new fresh ground to run over. Where you have pasture it is not quite so necessary to plow up and crop the ground so often, but the range should never be allowed to become foul. I believe your question of the number to run on your acreage will solve itself by the time you increase your flock to any large number. We are sending you under separate cover our bulletins which will probably answer your questions as to the best breed for egg production and marketing. I would suggest one of the three breeds—Plymouth Rocks, Rhode Island Reds or Wyandottes. I would look over the want ads in Western Farm Life. So far as I know the poultrymen advertising, they are reliable, but if you are buying any large number of fowls I would advise seeing them by all means before paying for them. A trip may seem rather expensive, but will probably not be as costly as to get a lot of old stock that will be a loss instead of a profit to you.

Beet Pulp for Poultry

Will you please tell me the value of beet pulp as chicken feed, also boiled oats or wheat? Four cups dry make 10 boiled. The pulp is soaked good and drained, then plenty of bran put with it to make it dry. The hens are running out but gradually the eggs are stopping.—E. H. F., Elko, Nev.

We have no way of determining the food value of beet pulp when fed to poultry. We do know, however, that in winter, especially when grain is scarce, it furnishes succulence and variety, is an aid to digestion and of course is of some food value. We would consider it valuable where no other green food is available.

Boiling or soaking grain adds nothing to the food value and probably detracts somewhat. The fact that boiling makes the grain more bulky is of no value whatever.

The fact that egg yield is gradually descreasing is not alarming in itself, as with good care the hens will probably go back to full lay at least until the hot weather is with us. Our own flock has broken twice this spring, but each time has come back until at the present time—June 5th—they are laying as well as at any time this season. Hens will begin to molt very soon and that fact, added to the warm weather, will decrease the egg yield very materially each month. This year hens have kept up laying better than is usually the case, because warm weather has been delayed.

Thinks Lime Essential

Editor Poultry Department:

May I comment on the article, "Feeding," which appeared in the December 15th issue, wherein it is stated, "For the backyard poultryman to furnish these things may do no harm and may do some good, but for farmers whose fowls have the whole farm for range, to buy grit and oyster shell is a waste of money."

In my experience, I have found that hens which range over the whole farm are not the best of layers. They spend so much time looking for bugs, grasshoppers, grit and lime that they overlook egg production. Such hens associate themselves in my mind with the man who, rod or gun over his shoulder, spends his time fishing or hunting. In some respects he leads an ideal life but he don't accomplish much work. I have read that up in Northern Minnesota where people sometimes capture young wild ducks and put them under domestic environments, such ducks when liberally fed and handled kindly, will lay well for a considerable part of the year, whereas in their wild state they lay but one clutch in the spring. This indicates that there may be some relation between confinement, regular feeding and egg laying. The conclusion I draw is that the matter of fowls running at range and foraging their sustenance may be overdone. Any poultry keeper with inclosed runs can readily demonstrate to his own satisfaction how much his fowls crave grit and lime in some form or other. Just keep these things away for a few days and see how greedily the flock will eat them when placed within their reach.

In 1908, at Niagara, N. Y., Prof. James E. Rice, in charge of the New York poultry experiment station, in a lecture delivered before the American Poultry association, described the results of certain experiments. Twelve hens were placed in an inclosed yard, covered with a board floor. Regular rations were fed including grit but no oyster shell or lime. To satisfy their craving for lime the hens ate abnormal quantities of grit. Egg shells began to get thinner and during the latter part of the experiment the hens seeking lime ate every egg as soon as it was laid in order to get the lime contained in the shell. Five of the hens died before the expiration of the year and the remaining seven became debilitated and weak. At the end of 11 months, the hens were again given oyster shells, after which they quit the egg-eating habit and again became normal.

In my experience I have found that air-slacked lime, first moistened with water and allowed to dry, gives as good results as oyster shells and is cheaper. Living on the outskirts of Denver as I do, with plenty of room, I can let my flock run at large the greater part of the year. Nevertheless, I buy prepared granite grit, 100 pounds of which costing $1, will last a year or longer. I always have over 100 head of fowl and so the grit and lime I feed does not cost over a penny a hen for the year. I figure that it is cheaper for me to buy lime and grit than to have the hens ranging over all out of doors looking for it. I should think the same rule would hold good with the farmer.

I am aware that much of the advice given about poultry, both from the college and press, comes from high collared experts, full of fads and fancies, whose knowledge of poultry is gained principally from reading. They represent one extreme. The other extreme is the old shiftless way perhaps most often seen on farms where little feed and hardly any care whatever is given to the stock. Now it seems to me that a happy medium between these two extremes can be found that will show a practical way to maximum poultry profits.—E. Grosser.

During the past winter fifty bales of hay were shipped by parcel post from Buhl, Idaho, to Garland, Utah, at a cost of $21.60 per ton for postage alone.

Perhaps it is just as well that the railroads in the mountain districts are not pushing the plan of permitting the cultivation of the right-of-way. Tourists have some rights when they buy tickets that entitle them to view the scenery, and the view should not be shut off by vegetation.

Pigs Have "Sore Mouth"

(Continued from page 10)

others seems to be hard and gristle. Am using a very strong disinfectant every other day and keep all affected ones to themselves for it seems to be contagious. They eat well but get so weak and in about two weeks die. I never saw anything like it and would like to know what to do for them.—J. J. M., Wray, Colo.

This is evidently what is commonly known as "The Sore-Mouth Disease" of pigs (Necrobacillosis), and is very common in the state. The germ (B. Necrophorus) is also responsible for "Calf Diphtheria" and the "Lip and Leg Disease" of sheep. A few years ago this disease in pigs was considered of very little consequence outside of Colorado. In the eastern states it was spoken of as canker and was not taken seriously. In the last few years it has become virulent in the eastern states and is causing heavy losses among small pigs. Farmers frequently speak of it as "Bull-Nose." In the aggregate it has probably caused a greater loss in this state than has hog cholera. The germs that cause it are found in the normal feces of hogs and only under certain conditions do they become virulent. This fact makes the disease very hard to combat. If we can exterminate the last germ of cholera or Foot-and-Mouth disease, we have done with these diseases; but the germs of necrobacillosis, more or less virulent, are found everywhere that hogs are kept. Notwithstanding, it pays to destroy every sick pig and use disinfectants freely. Pigs should be changed to pens on new ground frequently. The disease is usually in little pigs and these should be dipped in a tub of antiseptic consisting of one-half per cent potassium permanganate (1-200). Pigs should be caught and their mouths examined every two or three days. When ulcers are found they should be cleaned out with a scoop and touched with caustic. The Veterinary Division of the Agricultural College is working on this disease and hopes to find a more effective means of control.—G. H. Glover.

Alfalfa Redeems An Overdone Fruit District

(Continued from page 3)

back to alfalfa with no cattle to consume our hay and help enrich the soil. Alfalfa and cattle are absolutely necessary for the Uncompahgre valley to keep up its fertility and continue in the prosperous condition we find it today. At least one-third of our entire land in this valley must be growing alfalfa all the time whether we can use the hay or not, or our crops will go down below the cost of production."

Al. A. Neale, president of the Uncompahgre Valley Stockmen's association, and who for three successive years won the grand championship at the International Stock Show in Chicago on feeder cattle, recognizes the connection between livestock and farming. The past season he plowed up 27 acres of old alfalfa on which he averaged 205 sacks of spuds to the acre, selling at $2.50 per cwt., or over $550 the acre. Six acres of new land averaged only 103 sacks.

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Livestock

Pasture is the foundation of successful flock husbandry. Pasture makes for reasonable cost of ewe keep, adequate milk flow from the ewes, and more vigorous growth of lambs. The kind of pasture is not so material, since it may be in the form of permanent grasses like the native pasture of Idaho, or seeded pastures as found in different sections of the state; or it may consist of special forage crops seeded annually.

In some of the Idaho irrigated districts blue grass and white clover, watered at intervals of from ten days to three weeks, have been found to yield a wealth of feed. On the Gooding Station, Superintendent J. S. Welch has found that 15 to 25 head of sheep can be carried on one acre of mixed irrigated pasture. He has used there a mixture of Kentucky blue grass, orchard grass, smooth brome grass, meadow fescue, timothy and white clover. Irrigation water is used every ten days. On the University Farm at Moscow, a mixture of timothy, orchard grass, blue grass, clover and alfalfa has been found successful for sheep pasture. But little alfalfa should be seeded in a mixture intended for sheep in any section of the state, and alfalfa, even in a very small amount, is not safe in working under irrigation.

Special forages may be used entirely to sustain the flock, or may be sowed only for the purpose of supplementing permanent pastures. For early spring pasture fall-seeded rye and wheat are well adapted. Peas and oats, peas and barley, rape and kale, seeded rather early in the spring, yield abundant late spring and summer feed. Where summer moisture for germinating the seed and starting the growth of the plants can be depended upon, rape, kale, or peas and oats may be seeded in late spring or early summer for late summer and fall forage. This plan is followed by some sheepmen. If moisture conditions are satisfactory, one may arrange a series of forage crops for sheep as is the practice in England. Crops are seeded according to their adaptation to season and are seeded at such times as will bring on a succession of green forage from early spring until late fall. The last crop of the fall under the English system is roots.

In addition to grazing on permanent or annual pastures especially provided according to the above suggestions, the flock may feed on underbrush and other growth in lanes and other uncultivated areas. They do well on the aftermath of meadows and in general will save for the farmer forage that is either of no value for other livestock, or that could in no other way be so well utilized. If the flock is of much size, however, it can not be entirely maintained by utilizing waste material. Sheep make very good use of rough forage and poor pasture, but too heavy dependence on the flock in this direction often results in abuse of it. "Forcing the flock to rustle" is a practice that sometimes brings it near to starvation. In general, the cost of keeping the flock in summer is comparatively light. Enough pasture must be provided to maintain the ewes in thrifty condition, keep them milking well, and give opportunity for the lambs to supplement their milk with grass.

In many sections of the state pastures get short and dry in midsummer. There the specially sowed crops before mentioned can be used to advantage to tide over this period. In using pastures containing alfalfa or clover to any extent, the animals should not be turned to pasture when extremely hungry. It is also safer to keep them off legumes directly after rains or heavy dews. In non-irrigated sections mixtures, with clover and alfalfa as prominent ingredients, are safe for sheep if the precautions mentioned above are observed.

Sheep need water and should have it at frequent intervals. Clean and, if possible, fresh water, is most advisable. As spring days become warmer and summer is at hand, the flock prefers to graze in early morniug and late afternoon and evening. If permitted a choice in the matter, sheep spend the heated portions of the day quietly in a shady place. Shade trees or special structures permitting free circulation of air suffice for this purpose. Protection from the sun in summer during the middle hours of the day is necessary if the flock is to do well.

The rams should be kept separate from the ewes in summer. Otherwise, under Idaho conditions, the sheep man may later find himself possessed of some fall lambs.—E. J. Iddings.

Three Steers Per Acre of Corn

A steer feeding test recently completed at the University of Missouri College of Agriculture illustrates the possibility of reducing the cost of beef production by the extensive use of corn silage. Sixteen head of two-year-old steers fed for 130 days made an average gain in live weight of 322 pounds per head. They were fed 3.16 tons of corn silage, 750 pounds of alfalfa hay and 503 pounds of cottonseed meal and old process linseed oil meal per steer. They received no corn other than that contained in the silage. By this method of feeding a fairly satisfactory grade of beef can be produced, and it is possible to fatten three steers on an acre of good corn instead of one, which was usual under former methods of feeding.

Bert Cave Buys Herefords

H. Bert Cave, one of the best known of Colorado's cattlemen, formerly a breeder of registered Herefords, but of late years grower of high-grades on an extensive scale, recently purchased a notable foundation for a herd of registered Whitefaces on a visit to the cornbelt. Mr. Cave, accompanied by his nephew and manager, C. R. Milliken, attended the Blue Ribbon sale at Kansas City June 1, where he topped the bull division by paying $2,300 for the imported bull, Renown, consigned by Col. E. H. Taylor, Jr., of Frankfort, Ky. In Renown Mr. Cave secured a bull of excellent breeding, great scale and size, exceptional bone and plenty of style, quality and character.

Among the notable purchases of females made by Mr. Cave in this sale was May Dale by Perfection Fairfax, the old "King of Hereford Sires," with a Point Comfort 14th heifer calf at foot and rebred to the International grand champion. This three-in-one combination cost him $1,600, and looked well worth the money. For Miss Perfection 7th by the Harris champion, Prince Perfection, with bull calf at foot, Mr. Cave paid $1,025, and in this pair made another notable buy. From Messrs. O. F. Wilson & Son, Burlington Junction, Mo., Mr. Cave purchased 15 cows bred to Roland Fairfax that the Messrs. Wilson advertised in a recent issue of The Hereford Journal. There was also one calf in the lot. These were good females, ranging from four to seven years old.

In addition to Renown, Mr. Cave purchased Beau Perfection 42d and Rochampton 25th by Rochampton, in the Blue Ribbon sale. Then he looked over The Hereford Journal and went down to Memphis, Tenn., and purchased the good son of old Prince Rupert 8th. Prince Rupert 35th, and on his way back stopped at Monroe City, Mo., and purchased from the Wadsworths, Crusader Dale. Both of these bulls were advertised specially in recent issues of The Journal.

Mr. Cave's ranch is located on Call Creek, about 20 miles from Denver. It contains 5,000 acres, of which 1,000 acres are in cultivation. It is ideal pasture land, and he cuts about 700 tons of hay a year from it, which comes in handy during the winter. His herd of registered Herefords now numbers 22 head, all high-class ones, but will be increased rapidly. In addition, Mr. Cave has 100 purebred non-registered yearling heifers by a Prince Rupert bull, which he will breed to the good bulls he secured on his recent trip, and 400 head of high-grade Whiteface cows. —American Hereford Journal.

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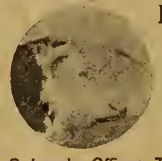
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I have the largest 6-year-old jack west of the Missouri River for sale. Other bargains in Mammoth jacks and jennets.
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New Blackleg Serum. Immunizes perfectly calves of any age by only one injection. Descriptive literature furnished.

BARGAINS Percherons, Belgians, Shire, Suffolk, Clyde, Hackney, Great Coach Stallions, $450 and up. Good Jacks. One, two and three years' time given purchasers.
R. I. LITTLE
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Shorthorn and Polled Durham Cattle
Valentine's Last, X12316; 452005 at head of beef herd. Claywood White, 427350 at head of milk type.
STATE INDUSTRIAL SCHOOL
Golden, Colorado

Elastic Stockings
KNEE CAPS, ANKLETS, SUPPORTERS, ETC.
Quick service, fresh goods made to order on our own loom. Write today for measurement blanks.
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The Grange

Offices 415 Charles Block, Denver

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C. W. SWAYZE, Stockyards Sta., Colo., Lecturer.
K. S. RHEA, Golden, Colo., Treasurer.
RUDOLPH JOHNSON, State House, Denver, Secretary.
OTIS SCRUGGS, 415 Charles Block, Denver, Business Agent.

Otis Scruggs, Purchasing Agent for the State Grange, is in receipt of information from the Arkansas Valley, again demonstrating the great benefits that may be derived from proper use of the organization. The growers of cucumber and melon seed in the valley have been granted a substantial increase over the original contract price as a result of collective action on the part of the Grange. The following letter from a Granger gives details: "You have probably noticed in the papers that the seed growers hereabout have been granted an increase in the contract price for growing cucumber and melon seed. This was remarkable because of the fact that within the last 60 days these contracts had been signed and the seed companies had resold the crops on the basis of the contracts. This increase, which probably amounts to over $100,000 for the valley and is likely all net profit, if there be such a thing under present conditions, was secured thru the united action of the Swink and Rocky Ford Granges. A committee from the Grange made a statement of conditions to all the companies concerned, with a request for a fair advance in price, which was conceded by telegraph in some cases. The larger of the contracting firms sent their president here personally to arrange the concession. In his remarks to the growers he said he preferred to deal with the growers thru an organization, and he asked them to make their organization as strong as possible."

Corrected Picnic Dates

John C. Ketcham of Hastings, Mich., will be the principal speaker at a series of Grange picnics to be held in Colorado during the week of July 9th to 14th. He is a graduate of the University of Michigan, now engaged in farming in that state, and is a very forceful political and Grange orator.

John Morris, Master of the Colorado State Grange, will attend each of the picnics and will give short talks. Other speakers have been secured by the committees in charge at each picnic, including Governor Gunter and Dr. Charles A. Lory, president of the Colorado Agricultural College. In addition, there will be band concerts, baseball games, races and other athletic contests, and drill team exhibitions.

The picnics will be held as follows: Monday, July 9, in the northern part of Washington county, 15 miles north of Akron; Tuesday, July 10, at Keota, Weld county; Wednesday, July 11, on the college campus, Fort Collins; Thursday, July 12, at Tellers Grove, east of Boulder; Friday, July 13, at Kiowa, Elbert county; Saturday, July 14, at Golden in the city park; Saturday evening, July 14, at Glendale Grange hall, South Denver.

At the Fort Collins picnic the Grange will co-operate with the Agricultural College in arranging a general "farmers' day," including a horse and colt show, visiting the college buildings, and inspecting the experiment fields. In Boulder county the Grange will join with the St. Vrain and Boulder Valleys Agricultural association, and an attendance of over 3,000 people is expected. Golden is the center of the strongest Grange spirit in the state, a region where every farmer belongs to the Grange, and it is expected that this picnic will draw several thousand people. In Elbert county it is likely that the picnic will be held in one of the numerous pine groves of that beautiful divide country.

Grange Notes

Pike's Peak Grange No. 163 has initiated several new members and is in better condition than for some time. A car of salt has been ordered by the Grangers.

South Border Grange No. 225 gave the following interesting program: A Play, Grace Jacques; Music, Mrs. Carlson; Gossip, Grace Bent; Surprise Feature, Mrs. Kohler; Discussion—Flowers in the Home—Mrs. Bent; Making Butter, Mrs. Hoover. Mr. George Sawhill of Pleasant View Grange, gave some interesting numbers.

Wild Rose Grange No. 160 will have a contest between the ladies and gentlemen for the best entertainment, the ladies having one evening, the gentlemen another. The losers must treat the winners.

Prairie View Grange No. 266 has purchased some flour and coal. The Master of the Grange gave an interesting talk on co-operation.

Riverdale Grange No. 187 had a good attendance at the last two meetings and initiated six candidates. State Business Agent Scruggs and his wife were present at one meeting. He told of the benefits the members could derive by making proper use of their business agent.

Darden Pomona gave an interesting program at Wheat Ridge June 2, at which Governor Gunter was expected to speak. As the chief executive could not be present, he asked ex-Governor Ammons to take his place. The latter spoke very interestingly on the work of the State War Council. Mr. Merlin H. Aylesworth, attorney for the State Utilities Commission, spoke on the work of the commission as it relates to agricultural problems, giving the Grangers many new ideas about the activities of the commission, in behalf of the producer. Dr. H. H. Clark, who is a favorite with the Wheat Ridge people, made an inspiring address and there was a brief talk by Mr. McHaig, master of the North Dakota Grange, who is touring the state in the interest of the Non-Partisan Political League. At the evening session Dr. J. W. Ellison was the principal speaker.

Not Liable for Stock

A asks for a loan of the National Farm assotiation and his land is not appraised high enough so that 50 per cent will equal the amount asked for. Is he liable in any way for stock subscribed for when asked for loan?—C. R. S., Henry, Colo.

A is not liable for stock subscribed for until loan has been granted. Section 8 of the Federal Farm Loan law, applying to this point, reads as follows: "Any person desiring to borrow on farm land mortgage, thru a national farm loan association, shall make application for membership and shall subscribe for shares of stock in such farm loan association to an amount equal to 5 per centum of the face of the desired loan, said subscription to be paid in cash upon the granting of the loan. If the application for membership is accepted and the loan is granted, the applicant shall, upon full payment therefor, become the owner of one share of capital stock in said loan association for each $100 of the face of his loan, or any major fractional part thereof," etc.

It will be noted from the above that the applicant does not become owner of the stock until his loan has been granted, consequently no obligation in reference to the stock exists if his application is not accepted.

Exemption of Property

Will you kindly inform me what is the exemption on personal property in New Mexico, and is there a law that a man's homestead can be sold to pay off a judgment after he gets a patent for his land? If a man were to die with this judgment not paid, could they sell his property to pay said debt, leaving the wife destitute? What part does a wife get of personal property and real estate where there is no children and no will left?—W. I. S., New Mexico.

In New Mexico the exemption on personal property is the wearing apparel, household goods and kitchen utensils and tools; also 80 per cent of the wages of a married man or the head of a family are exempt. In real estate the homestead is exempt up to the value of $1,000. If judgment is filed against a homesteader before he gets his final receipt and patent, it cannot be enforced against the land.

Where a man dies and leaves no children, his entire property goes to his wife, and the wife is allowed her living expenses out of the estate after his death before any debts or judgments are paid.—Peters & Barker, Attorneys, Denver, Colo.

Farmers' and Stockmens' Exchange

Advertisements will be inserted in this department for 5c per word; four or more insertions, 4c a word each insertion. Remittances can be made by postoffice money order or personal check. Advertisements are set in uniform style, no display type or illustrations admitted under any circumstances. Every figure and initial counts as one word. Guaranteed circulation over 50,000 copies each issue. WESTERN FARM LIFE is issued semi-monthly the first and fifteenth of each month. Advertising copy for this department must reach us ten days before date of issue. It carries the most classified advertising because it gives you best results. Send us in a trial advertisement. Write for proof showing how these columns pay advertisers.

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WANTED—HEAR FROM OWNER GOOD FARM for sale. Cash price; description. D. F. Bush, Minneapolis, Minn.

WANTED—TO HEAR FROM OWNER OF FARM or unimproved land for sale. O. K. Hawley, Baldwin, Wis.

FOR SALE, LIBERAL TERMS—10 ACRES Clark Colony, near Denver; good old water right, fair improvements. The La Veta State Bank, La Veta, Colo.

240 ACRES, WELL IMPROVED, 4½ MILES of county seat of Fulton County, Arkansas, to exchange for income property or farm in the West. Also other exchanges. Oaks-Realty Company, West Plains, Mo.

I HAVE SOME CASH BUYERS FOR SALABLE farms. Will deal with owners only. Give full description, location and cash price. James P. White, New Franklin, Mo.

HAY RANCH, COLORADO, 800 ACRES DEEDED land; cuts 550 tons hay. Adjacent to forest reserve. Good water rights; lake. Ideal hay and cattle ranch. Price, $40. Terms. Address E. S. Bates, 1760 Penn., Denver, Colo.

IF YOU DON'T FIND ADVERTISED HERE what you want, write our classified advertising department and they will be glad to place you in correspondence with the right parties.

FOR SALE—CHOICE 160 ACRES, PRICE $1,250; 320 acres improved, $3,200; 640 acres, spring water, price $6400; can give part time. If you are looking for a good home or investment, call or write Zickrick, Nunn, Weld Co., Colo.

SOUTH CENTRAL TEXAS. MATAGORDA County, the rain belt, sure-crop county. No droughts. Can show now fine growing crops cotton, corn, luxuriant pastures. For land bargains address Magill Bros., Bay City, Texas. Live agents wanted.

JUST RETURNED FROM SOUTH AMERICA—Arranged for million-acre grant; organizing cattle company. Want members join organization who are given 2,000 acres and stock in company for less than five cents an acre. Want sixty to seventy members to go to work on ranch. Highest reference. Box Q, Sawtelle, Calif.

360 ACRES, FARM AND STOCK FEEDING place, near R. R., school and church; nearly all cultivated; ample water rights; pasture with running water; 200 acres alfalfa; fine beet land; sheep pens fully equipped for 3,000 head; nice improvements; priced low at $75.00 per acre; no trades; easy terms. Fothergill & Atherton, Fort Collins, Colo.

ALFALFA IRRIGATED RANCH—ALFALFA IS now selling to the alfalfa meal mills at $15 per ton on contract for the season crop, which makes four to six tons per acre. Can sell you well-improved farm, 80 acres, half mile meal mill, Nine Thousand Dollars. Best of water rights. Have other bargains. W. R. Connelly, Hartman, Colo.

$2500.00 DOWN BUYS 105 ACRES OF WHEAT, 10 acres oats and 320 acres good Montana wheat land. This farm is better than 80% tillable; 11 miles from town, 2 miles from school; is all fenced and has fair buildings and good well. This year's crop should more than make the first payment and liberal terms will be given on balance. For further particulars write Gilbert Gottfrey, Roundup, Mont.

GOVERNMENT LANDS

GOVERNMENT, STATE LAND—BARGAINS. Booklet free. Joseph Clark, Sacramento, Cal.

POULTRY

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QUALITY DARK CORNISH. R. H. JANDEBEUR, Alma, Nebr.

QUALITY DARK CORNISH, THE IDEAL FARM fowl. W. W. Officer, Fowler, Colo.

BUFF ORPINGTON DUCKS—12 EGGS, $1.75. Sunnyslope Farm, Stillwater, Okla.

FAWN WHITE RUNNERS; ELEVEN, 75c, POSTpaid in Colorado; 100, $4.00. Mrs. Baker, Arvada, Colo., Route 1.

GET MY FREE MATING LIST OF CHICAGO and Madison Square prize-winning Langshans. John Lovette, Mullinville, Kan.

WHITE ORPINGTON EGGS FROM LARGE scored birds; $6.00 per 100, $1.50 setting. Otto Hampp, Beaver Crossing, Neb.

S. C. BROWN LEGHORN BABY CHICKS $12.50 per hundred; beauty and utility strain; trapnested eggs also, $5.00 per hundred. Paradise Poultry Farm, Carona, Kan.

HALL'S S. C. REDS AND WHITE ROCKS WIN again at the Great Denver Stock Show. Eggs, $1.50 per setting up. Mating list free. Stock for sale. Liston L. Hall, Gering, Neb.

SIX GRAND PENS ROSE COMB REDS, MATED to roosters costing $15.00 to $50.00; 15 eggs, $2.50; 30 eggs, $4.00; 50 eggs, $6.00. Pure bred range flock, $5.00 per 100. Baby chicks. Send for catalog. W. R. Huston, Americus, Kans.

COLUMBIA HATCHERY—ALL LEADING VArieties of baby chicks, cockerels and hatching eggs. Reds, Rocks, Leghorns, Orpingtons, etc. Live delivery of baby chix guaranteed to your express office. We ship to all parts of Colorado, Wyoming, New Mexico. Write for price list P. O. Box 1102, Denver.

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BRED-TO-LAY S. C. REDS—FINE, LARGE, hardy, hen-hatched, free range, heaviest winter layers; eggs, $1.00 setting; $2.50 fifty and $4.50 hundred, guaranteed. Belmont Farm, Topeka, Kans.

LIVE STOCK

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CATTLE

MILKING SHORTHORNS AND JERSEYS FOR sale. W. A. Wight, Las Animas, Colo.

FOR SALE—REGISTERED JERSEY HERD OF the St. Lambert and Hood Farm breeding. Largest in size and production. Will sell bull calves very cheap. Excelsior Dairy, O. S. Larson, Prop., Fort Morgan, Colo.

FOR SALE—DOUBLE STANDARD POLLED and Horned Hereford bulls. Wallace Libbey, Maxwell, N. M.

CATTLE AND LANDS FOR SALE—200 HEAD purebred Hereford cows (and calves put in) and improved native hay and alfalfa lands—one-half cash, balance on long time, low interest. Address Owner, Box 25, Hillside, Fremont County, Colo.

HEREFORDS—15 YEARLING BULLS AND about 30 bull calves, all registered, and of the best breeding and individuality. Among the yearlings are three herd headers, also one 4-year-old bull by Simoon. All at popular prices to order to sell. J. O. D. Ranch, Aroya, Colo.

REGISTERED JERSEYS AND MILKING SHORThorns. Jersey herd headed by Maggie's Shy Duke, 140084, Grand Champion Denver Stock Show. Two nearest dams average 54 lbs. milk per day. Shorthorns headed by Independence Lee 427351. Two grandams average 9023 lbs. milk in one year. The Hinman Silo Co., 1650 Champa st., Denver.

HOGS

BIG BONE POLAND CHINA BOAR PIGS, REGisterd, $15.00. Barney Bros., Haswell, Colo.

REGISTERED, BIG TYPE DUROC JERSEY hogs for sale. Edgemoor Farm, Littleton, Colo. Caldwell Martin, Owner.

REGISTERED DUROC JERSEY BOARS AND gilts, sell at $15 and up, according to age and quality. We are sold out on bred gilts, but can contract for gilts to be bred for later farrowing. Our sales at the Denver yards speak for the quality. J. O. D. Ranch, Aroya, Colo.

HORSES

NOBLE REX, 5-YEAR-OLD REGISTERED SADdle-bred stallion, 16 hands, black, 1,200 lbs. Grand individual, goes all five gaits; winner of stallion class at 1917 Denver Stock Show. By a son of the immortal Rex McDonald. J. O. D. Ranch, Aroya, Colo.

JACKS AND MULES

KIT CARSON, A BIG-BONED 7-YEAR-OLD jack, winner at Denver show, $500. Also a great yearling jack, promises to be bigger and better than his sire, and out of a jennet who took first at Denver also; price, $250. We have some excellent mules for sale; all ages and sizes. J. O. D. Ranch, Aroya, Colo.

HELP WANTED

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WANTED—MEN AND WOMEN TO QUALIFY for Government positions. Several thousand appointments to be made next few months. Full information about openings, how to prepare, etc. Write immediately for booklet CG847. Earl Hopkins, Washington, D. C.

MISCELLANEOUS

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FARMERS AND STOCKMEN, IF TROUBLED with Loco Weed, you can kill it with our Loco Killer without chopping or digging. Also want men to handle territory. If interested, write Western Mfg. & Trading Co., Box 673, Denver, Colo., Successors to Weisenborn & Huck.

FREE FOR SIX MONTHS—MY SPECIAL OFFER to introduce my magazine, "Investing for Profit." It is worth $10 a copy to anyone who has not acquired sufficient money to provide necessities and comforts for self and loved ones. It shows how to become richer quickly and honestly. Investing for Profit is the only progressive financial journal and has the largest circulation in America. It shows how $100 grows to $2,200; write now and I'll send it six months free. H. L. Barber, 449-20 Jackson Blvd., Chicago.

BUSINESS CHANCES

FOR SALE—SPLENDID PAYING NURSERY business in rich growing West Texas plains country. Two miles from Plainview, 160 acres good land, improved and equipped with large and complete stock of varieties adapted to this climate. Stock will retail for more than enough to pay for whole place and improvements. Well improved and equipped for irrigation. Price Forty Thousand. Have been doing a sixteen thousand dollar business every year. Reason for selling is bad health. Plainview Nursery, Plainview, Tex.

BEE SUPPLIES AND HONEY

BEE SUPPLIES OF BEST QUALITY. SEND for 68-page illustrated catalog. We also sell Comb and Extracted Honey. The Colorado Honey Producers' Association, Denver.

IF YOU DON'T FIND ADVERTISED HERE what you want, write our classified advertising department and they will be glad to place you in correspondence with the right parties.

KODAKS

KODAKS, CAMERAS, PHOTO SUPPLIES—Fords, the best kodak store, 1029 16th St., opp. old P. O., Denver, Colo., for Eastman Kodaks, all makes cameras, films, photo supplies; develop any size roll films, 10c; print pictures, 3c each and up; mail orders solicited; kodak and camera catalogue mailed free upon request. Mention this paper

IF YOU DON'T FIND ADVERTISED HERE what you want, write our classified advertising department and they will be glad to place you in correspondence with the right parties.

Make Your Complete Tire Equipment FISK

Time to Re-tire? (Buy Fisk)

Time to Re-tire? (Buy Fisk)

How About That Spare Rim On Your New Car?

BEGIN right now by getting a Fisk for your spare rim. Thousands of today's users of complete Fisk equipment began years ago with the purchase of a single tire. Experience proved to them that Fisk is the best dollar-for-dollar tire value on the market—and the standard of Fisk Quality is higher today than ever. Get at the bottom of the tire question—learn that "*when you pay more than Fisk Prices you pay for something that does not exist.*"

The Meaning of Fisk Tire Service

A special feature of Fisk Tire Value is the policy of Free Service through Fisk Branches in more than 125 principal cities throughout the country. There are Fisk Branches in your State, where your home dealer buys direct and is always sure of promptest attention to your wants. And when the Branch is convenient you can go there any time, *whether you use Fisk Tires or not,* and make use of the only uniform and complete Free Tire Service in the country. No charge at any time except for supplies and actual repairs.

Take the first opportunity to get acquainted with *Fisk Service,* Fisk Organization, Fisk Methods and Fisk Products. If you do not find a Fisk Branch in the partial list below that is convenient to where you live, write for complete list—there may be one nearer you.

THE FISK RUBBER CO.
of N. Y.
General Offices: Chicopee Falls, Mass.

Fisk Branches in Denver, Salt Lake City, Billings, Butte, Great Falls, Rapid City, Hastings, Lincoln and Omaha.

Fisk Dealers Everywhere (7)

12011

FISK NON-SKID

FISK NON-SKID

J. M. ROSÉ

WESTERN Farm Life

A LESSON IN CANNING SNAP BEANS

Upper 1—Wash the Beans Clean	2—Snip the Ends and String	3—Blanch in Hot Water	4—Plunge Into Cold Water
Lower 5—Pack Close	6—Do Not Seal Tight	7—Cook 1½ Hours	8—Seal Tight at Once

(Photos by Courtesy Agricultural Extension Dept. International Harvester Co.)

Denver, Colorado
July 15, 1917

Farmers, Look!

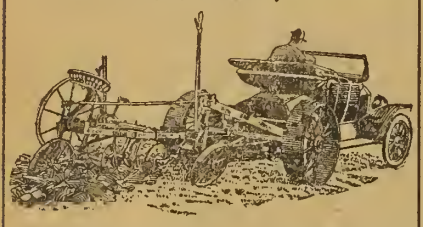
The STAUDE MAK-A-TRACTOR

Farming Costs Cut in Half!

Guaranteed to do all the work of four strong, sturdy horses. Far better, far cheaper. Costs no more than one horse and harness. No feed when not working. Pulls two 14-inch gangs in soil where two horses can pull but one. Speed up to 2½ miles per hour steadily 24 hours a day if necessary. Special pinions at slight extra cost furnish speed up to 5 miles an hour for hauling wagons. Write us for further information. Write, wire or phone for dealers' proposition. Will be a money maker.

MOORE-HARDY TRACTOR CO.
Colorado, Wyoming and Southwestern Nebraska Distributors
1743 Broadway, Denver, Colo.

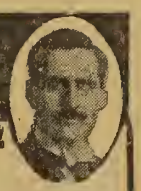
PULLFORD TRACTOR, $135
F. O. B. Factory



Pullford pulling two 14-in. plows. The "Pullford" does the work of four big horses on high gear, attached to practically any make of car in 30 minutes; removed in less time. The "Pullford" will do all your farming, such as plowing, harrowing, seeding, harvesting, etc. Will also do your heavy hauling. No farm should be without one. Live agents wanted in every county in Colorado, Wyoming, New Mexico, Texas, Oklahoma.

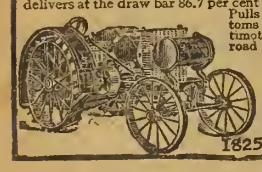
THE HEADINGTON AUTO CO.
Distributors
1636 Broadway, Denver, Colorado
Branch Office, 1909 Commerce Street
Dallas, Texas

Save on a TRACTOR!



Guaranteed by Galloway!

Has everything you want and demand on a tractor and saves you money, because you buy direct from the manufacturer. 12 full H. P. on draw bar, 20 H. P. on belt, four-cylinder, water-cooled, long-stroke, modern motor. By actual test requires only 13.3 per cent of motor's power to propel itself, delivers at the draw bar 86.7 per cent of the motor's efficiency. Pulls easily three 14-in. bottoms 8 to 9 in. deep in clover or timothy sod. Unexcelled for road building. Will do any portable engine job.



FREE Book Write tonight for the book that tells all and explains my money-saving system.
William Galloway, Pres.
WM. GALLOWAY CO.
1825 Galloway Sta., Waterloo, Ia.

Comfort Indoor Closet

ODORLESS SANITARY GERM-PROOF

Every home without sewerage needs one. Most convenient, meritorious home necessity in a century. A boon to sick people. Can be placed anywhere in house.

SWAT FLY BREEDING PRIVY

Put a warm Comfort Toilet in your home; a guarantee of healthy, sanitary conditions. Germ-life killed by chemicals in retort. Emptied once a month—no more trouble than throwing out coffee grounds. Needs no other attention. Boards of Health endorse it. Write now for literature, prices, etc. Agents wanted.

THE COMFORT CHEMICAL CLOSET CO.
1650 Champa, Denver, Colo.

Sudan Makes Good Silage

Experiments with Sudan grass as silage were conducted last winter by the Oklahoma State Experiment Station with satisfactory results, as given in a bulletin just published. It is shown that Sudan compares quite favorably with corn, the principal difference being in quantity of fiber. The silage from Sudan was found as palatable as that made from any of the other sorghums, but not quite so palatable as that from corn.

The crop which was used in the experimental work was sown with an ordinary grain drill at the rate of 18 pounds to the acre. The grass was cut with a grain binder and hauled almost immediately to the silo. At the time of the cutting, about one-sixth of the plants had reached the milk stage. The plants made a rapid growth and the dense condition caused the development of the fine stalks. Experiments on the college farm had demonstrated that when the crop is seeded by means of a drill the stalks are much larger than when the seed is broadcasted. A steel silo 25 feet high and 9 feet wide, approximate capacity 75 tons, fitted with doors and without a cover, was used for curing the crop. As each door was put in place it was made airtight with the aid of cotton batting. About a week before filling, the interior of the silo was thoroly covered with asphalt paint. The Sudan grass was cut early in August, 1916, during a dry period, so that the plants did not contain as much moisture as desired.

The cutter was adjusted so as to cut to a three-quarter inch length and a small stream of water was kept flowing into the blower, thus distributing the added water thruout the material as it was placed in the silo. During the filling of the silo the material was packed by three men tramping it into place as solidly as possible.

The Sudan grass, owing to its leafy nature and dry condition, did not pack readily. The day after the silo had been filled, water was added at the top until it ran out at the two-foot level. Three days later the contents of the silo had settled several inches, and this space was filled with additional wetted silage to serve as a cover. This material did not cure well and was discarded when a strong, moldy condition developed, but the silage just beneath it cured nicely and retained its flavor thruout the feeding period.

The bulletin shows comparisons between Sudan grass silage and corn silage at various stages of the feeding period, one of which will suffice:

Sudan grass silage from middle, 140 days after being siloed: Ash, 6.51 per cent; protein, 10.36 per cent; carbohydrates: fiber, 33.57 per cent; nitrogen free extract, 46.79 per cent; fat, 2.77 per cent; dry matter, 27.24 per cent.

Corn silage from middle, 182 days after being siloed: Ash, 6.20 per cent; protein, 8.85 per cent; carbohydrates: fiber, 22.84 per cent; nitrogen free extract, 59.15 per cent; fat, 2.96 per cent; dry matter, 27.44 per cent.

The bulletin is by C. K. Francis and W. G. Friedemann of the Department of Chemistry.

$400 From Patch of Sudan

From two and one-half acres of Sudan grass, J. W. Grace, at Riverton, Utah, got a revenue of $400 for seed. He writes as follows: "I will just say a word about the Sudan grass I got from you. I planted it on two and a half acres, rather heavier than I wanted to plant. But I harvested about $400 worth of seed, besides getting several tons of straw which made a splendid feed."

Something in Sight

"Is the president in?" asked the diplomaed young man of the tousled boy in the outer office.

"In Florida."

"Is the manager in?"

"Won't be back until 2 o'clock."

"Do you suppose there is any position open here for a college graduate?"

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WESTERN FARM LIFE

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Largest Circulation of Any Farm Magazine in the West

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Two Thousand Attend the Silo Meeting at Limon

RIVAL TOWNS SHUT UP SHOP TO HEAR LIVESTOCK TALKS

IF Herbert C. Hoover, United States food commissioner, had been at Limon, Colo., June 20, he might have thrown up his hands in protest at the apparent disregard for food conservation. Fifteen hundred pounds of beef disappeared in the course of an hour. It was served to about 2,000 farmers and their families who had come from all parts of the surrounding country to enjoy the hospitality of the people of Limon. The occasion was a Silo meeting and it was probably the largest farmers' extension crowd ever assembled in that part of eastern Colorado.

The beef was roasted in pits, in good old-fashioned barbecue style, and was served free to everybody with bread, pickles, coffee and buttermilk. Before and after dinner the Agricultural college silo crew gave lectures on silo building, silage feeding, conservation of farm animals and home economics. R. W. Clark, livestock specialist of the Extension department was the principal speaker. He was assisted by Dr. I. E. Newsom of the Veterinary department, Miss Miriam Haynes of the Home Economics department, and J. W. Adams, superintendent of the Cheyenne Wells substation. The latter gave the farmers the benefit of his long practical experience with a herd of dairy cows at Cheyenne Wells, where he is making money by feeding silage and dry forage grown on eighty acres of dry land. He told of his four pit silos, in which he is able to store a reserve supply for two or three seasons.

Prof. Clark's silo talk is summarized as follows: "No livestock on the farm means depleted soil, small crop yields, few if any profits, little cash at any time, hard-up farmers, dependence, discouragement and discontent. Livestock on the farm means enriched soil, larger crop yields, larger profits, money all the time, prosperity, independence and contentment."

Dr. Newsom told the farmers that there was nothing in this theory of the "beautiful atmosphere free from hog cholera" that one reads about. He told of the experience of the farmers of the San Luis valley, whose business dropped from millions down to almost nothing in three years of cholera and of how the valley succeeded, by collective action and the adoption of sanitary measures, in eradicating cholera. Stock losses from poisonous plants, he said, amounted annually to about half a million dollars in Colorado, while preventable diseases and winter losses made up a total of many thousands more. He urged the farmers to give this matter serious attention. There are means of stopping most of this loss; all that is lacking is action to take advantage of existing agencies and methods. He told of the formation, under the governor's war council, of a commission comprising Dr. W. E. Howe of the U. S. Bureau of Animal Industry, Dr. C. G. Lamb, state veterinarian, and Dr. George H. Glover, head of the Veterinary department of Colorado Agricultural College, to handle the question of livestock conservation from the veterinary standpoint during the war.

Miss Haynes spoke especially of things affecting the farm household, of the problems that the war had brot and of what the women could and should do to help food conservation.

The silo campaign started early in June in Weld county and gathered impetus as the lecture crew went along, covering the entire plains section.

Nothing better illustrates the spirit of patriotism that animates the rural regions than the fact that local jealousies were forgotten and everybody came to the central point for a rousing meeting. This was particularly true at Limon. The county seat town, Hugo, shut up shop for the day and nearly everybody, in town and country, went to Limon to help make the meeting a success. Genoa did the same and there were farmers and townspeople from Seibert and Flagler on the east and as far as Simla on the west. The practical talks for farmers were but a part of the program, which included also attention to the Red Cross campaign and other matters more particularly in line with the war. The man who says there is apathy in the country hasn't been there. The farmer is right on the job every minute, producing food, buying Liberty bonds, giving to the Red Cross and offering his life and the lives of sons that the country may win the war and "the world may be made safe for democracy."

Hints on Silage Making

Silage made from the immature whole plant (corn) is generally of poor consistency, too sour, too high in moisture, and otherwise unsatisfactory. Its feeding value is much less than that of mature corn, because the amount of nutrients stored in the corn plant increases continually up to ensiling time. The loss during the fermentation is also greater, on account of the larger amount of sugar in the plant at this stage and the consequent greater production of acid and carbonic acid gas.

It is better, therefore, to leave corn in the field as long as possible, even until after frost, rather than to ensile it too soon. Corn which has been absolutely frozen will make good silage, as freezing will not destroy the enzymes, and there will be plenty of opportunity for the entrance of acid-forming bacteria during the silo filling. Of course the corn must not be left in the field so long after being killed by frost that it begins to mold, or the leaves become so dry that they are brittle.

The following experiment furnishes evidence of the fact that frozen corn makes good silage. Several stalks of corn were cut and placed in an artificial ice machine, so that they were solidly frozen for twelve days. They were then thawed out, chopped, and ensiled as usual. The consequent evolution of carbonic acid gas, and the formation of acid and alcohol, were about the same in amount as in the normal corn silage. The appearance and odor were normal and good. Of course, after corn is frozen, the plant cells are killed, and after thawing will spoil. Therefore the corn should be ensiled as soon as possible thereafter.

The corn forage should be ensiled when the grains are well dented, which is generally when the lower leaves and husks are beginning to dry up, and the corn is nearly ready to be cut for shocking. The sizes of pieces into which the corn should be cut is not of very great importance, but an average of one-half to one inch long is very generally accepted as correct. The corn will usually not need added water if cut at the proper time in a normal season. In general it is better, however, to allow the corn to become as mature as possible, and add water, rather than to ensile it when too green. If it is dried out or has been severely frozen, so that it does not feel moist in the silo, water should be added, preferably at the blower. Then when the silo is filled the top of the silage should be thoroly soaked with

(Continued on page 15)

Upper picture: Miss Miriam Haynes of Colorado Agricultural College talking on Home Economics to a farmers' audience at Limon.
Lower picture: Autos at the Silo Meeting show prosperity of farmers of Lincoln County.

Equity Mercantile Supply House

Business Based on the Golden Rule

PROFITS TO PRODUCER IN EQUITY UNION PLAN

ALVIN T. STEINEL

"GOLDEN rule co-operation in business will solve the distribution of wealth and make us a united nation of home owners and home builders, instead of a divided nation of landlords and tenants."

This is one of the maxims of the organization that is attempting in Eastern Colorado the most extensive experiment in co-operation among farmers ever tried in the West. Activities in Colorado are only a part of the system which is now spreading over the entire Middle West and which had its origin at Greenville, Ill., about six years ago in the organization of the Farmer's Equity Union. Limon is the center of operations for Colorado. At that point has been established a farmer's exchange, officially known as the Equity Mercantile Association, which has been running about two years, and the Equity Creamery and Mercantile Association, just starting operations as a centralizing plant for the manufacture of butter made from cream produced along the Union Pacific and Rock Island railways from Watkins, Colo., on the west to Jennings, and Sharon Springs, Kan., on the east.

Application of the Golden Rule is a new deal in business, but it seems to be working to practical advantage in Equity Union affairs. The writer, on a recent visit to Limon, was shown some of the things that the producer is doing in acting as his own middleman. While the rule of "Do unto others as you would be done by," is the guiding principle of the organization, it nevertheless lacks nothing in the way of a sound business foundation. Everything is done on the corporate plan. The Equity Mercantile Association is a concern dealing in all kinds of farm produce, buying from the producer and selling to him what he needs in the way of seed, feed, implements, fencing and heavy supplies of a like character. The Equity Creamery & Mercantile Company is a separate concern, organized for the purpose of buying cream from any and all producers who choose to offer it to them for sale, manufacturing the cream into butter, which is shipped in tubs to the general market in Chicago.

The point in which these mercantile establishments differ from the ordinary supply house or creamery is in the fact that their stockholders are the many producers patronizing them. These stockholders get the profits made in the business, while in private concerns the profits go into the pockets of the few people who put up the necessary capital to carry on the business.

Stock Dividends Limited

The Equity Mercantile Association is capitalized for $10,000, and in the year closing June 1, 1917, it had 112 stockholders, with a very few exceptions active farmers. Dividends on the stock are limited to 3 per cent per annum, the purpose being to discourage stock owning by any but active farmers. At the end of the year profits are pro rated among the stockholders, not in accordance with the shares of stock they own, but according to the volume of business they as individual, did thru the corporation. This pro ration, as it is called, is in addition to the stock dividend of 3 per cent. The distribution for the fiscal year just ended totalled $2,981.90, which was on a volume of $34,898.55; being 8 per cent on the volume and 48⅔ per cent on the capital stock.

I saw the list of profit sharers and noted that among the 112 farmers participating there was one who got a pro ration of over $200, while others had only a few dollars each, in addition to their 3 per cent. Stockholders in the Equity Mercantile Association are limited in their holdings to six shares of the par value of $25 each, but a man can start with one share if he wishes. The business career of the first corporation has been so successful thus far that it was recently decided to build an elevator, at a cost of $5,000, which will be ready to receive the grain and beans of the Limon district this fall.

The mercantile association is rather local in character as compared with the Equity Creamery and Mercantile Association, which, as has been stated, is a separate corporation and has a separate plant. Fred L. Palmer, principal organizer of the Equity Union in Eastern Colorado, is president of both concerns. Mr. Palmer has been called on to assist in getting similar organizations under way in other states.

Represents a Value of $25,000

The creamery plant represents, as it stands today, a value of $25,000, and it was doing a large business, tho having been under way for only a few weeks when the writer visited Limon. The start was made by the parent concern, the mercantile association, which acted as cream buyer for its farmer patrons, in turn selling the product to the large private creamery concerns. This led to the organization of the creamery company and building of a butter making plant.

There is no resort to price cutting and no attempt is made to break the market. Produce and wares are bought and sold at market prices. The farmer who brings a can of cream to the Equity creamery gets just as much and no more per pound of butterfat than he would get if he delivered the the cream to the Beatrice company's buyer, or to the Fairmount company's buyer at Limon. If he goes over to the Equity Mercantile supply house to get some seed corn he pays for it at market value. If it is some product that has been grown in the district and is furnished by some other member of the Equity, naturally he saves the freight in and out. The producer of that particular thing has thus been furnished with a home market and two railroad hauls have been eliminated.

On dairy products it works out in this way: The producer gets full price for his cream and at the end of the year, besides the dividend of 3 per cent earned by his stock in the creamery, he gets his pro rata or the profit made on the sales of butter. Under the system of private capital this profit goes into the pocket of someone furnishing only the money to run the butter plant, and neither the brains, energy nor capital that the farmer has been obliged to put into production. Under the Equity system it all comes back to the producer, minus only the salaries paid to the hired men who run the business or make the butter. Success of the system depends on good business management.

Capital Stock Is $100,000

The creamery is capitalized for $100,000 in shares of the par value of $25 each. There has been subscribed $27,000 of this capital, no stockholder being allowed more than two shares. There are now 550 stockholders, scattered thru the territory from which cream is drawn, and the capital stock was made large enough to accommodate from twelve to fourteen hundred more stockholders. Purchases of cream are not confined to stockholders; outsiders can sell their cream to the Equity, but while they get the same price as if they sold to private concerns, they, of course, do not share in the profits of the business.

The Limon creamery is the fourth of a chain of seven to be operated by the Equity Union in the West. Others already established are at Aberdeen, S. D.; McCook, Neb.; Fort Morgan, Colo., and those in course of organization are located at Dodge City, Liberal and Wichita, Kan.

The Limon creamery is located in a territory exclusively comprising non-irrigated lands under limited rainfall, where dairy farming is the safe system. That the farmers are following the "safety first" slogan is evidenced by the fact that in less than a month after the creamery was in operation it was shipping to Chicago two carloads of butter a week. The day the writer visited the plant—it was silo day at Limon, June 20th—5,800 pounds of butterfat were received and the farmers got 37 cents a pound for it. As high as 41 cents had been paid. When all the machinery is installed the plant will have a capacity of two carloads a day. There is ample storage space and machinery for refrigeration, so that butter can be held, if necessary.

Adopt Their Own Brand

The plant is now marketing its supply independently, but when the three Kansas creameries get under way the output of the seven plants will be marketed as a whole. A uniform brand will be adopted and butter will be put up in cartons instead of being sold in tubs to the Chicago commission men.

The Equity creamery has in view a constant campaign of education among producers, to form cow testing associations, to get them to buy better cows, to instruct them in the proper handling of cream and also to finance the purchase of cows for those who need credit. The pooling of the credit of a thousand or more farmer-stockholders will enable the organization to finance any collective movement that might be desirable.

The Equity Union owns a seat on the Kansas City Board of Trade, thru which all the grain of its members is marketed, the profits going back to the producers. Just now a big Exchange is being organized in Chicago, which is to be the central agency for all the local corporations for the purchase of coal, lumber and other supplies and eventually the manufacture of farm implements.

Independent of Headquarters

One of the unique features of the organization is the fact that corporations like those formed at Limon are absolutely independent in their management of the parent organization. The individual farmer pays a small annual membership fee to the central organization, which entitles him to receive the official organ, a weekly paper known as the Equity Union Exchange. None of the revenue of the local business goes to headquarters. Another distinguishing feature is the fact that there is no social side to the Equity Union. A farmer may belong to the Grange, he may belong to half a dozen fraternal or social organizations, or he may belong to none—all of that is strictly a matter for his own concern. It is only on the business side that the Equity Union touches him.

Boards of directors comprising farmers oversee both the creamery and the mercantile establishment at Limon, the active managers being F. P. Minnich of the creamery and T. O. Iverson of the mercantile concern.

Milling Business at Flagler

At Flagler, Colo., the Equity Union has established a milling and elevator business, with Alexander Felt as manager and W. A. Phipps secretary. The flour mill is a small one with a capacity of 25 barrels a day, and a large business is done in feed grains, seed, machinery, coal, etc. Eighty members are sharing in the profits of the business. They market their wheat at Flagler and get back part of it as flour. The object is to save outgoing freight on wheat and freight on flour shipped in, by building up a home market for the finished product.

Farmers Unloading Cream at the Equity Union Creamery, Limon, Colorado

Bees Refuse to Swarm

Western Farm Life Service Bureau:

I have a stand of bees that have been in the hive three years and, as far as I know, have never swarmed, but they work fine and make a nice lot of honey, but as I have only one hive and would like to have more I am anxious to know why they do not swarm. I have been watching them closely since the first of June, 1916.—M. L. L., Colorado.

It is considered by good beekeepers to be a great advantage if bees do not swarm, and inasmuch as you have been getting a good lot of honey, you have not lost much. It may be possible that your bees have swarmed when you were not watching them. If you examine the brood nest once a week during the swarming season, it is very easy to tell when swarming preparations are being made by the building of queen cells. The finished queen cell will be about the size and have very much the appearance of a peanut, the cell hanging down and protruding from the side or edge of the brood comb. Bees are quite prone to build these queen cells in bunches or clusters, altho they may not always do this. There is nothing you can do to increase your colonies if they will not swarm, unless you divide artificially. This may be done by removing the queen from the brood and giving the broodless part a young queen or a queen cell. This dividing should not be done unless the colony is very strong in both brood and bees. If you desire more bees, you may purchase them or secure them by this artificial dividing. In either case you should have a good bee book, such as "A. B. C of Bee Culture," of Langstroth or "The Honey Bee." These books may be secured from all supply dealers.

Poisoning Carcasses

What is the law pertaining to putting poison on carcasses? I lost a stock dog that money cannot replace. He got poisoned by eating from a dead calf that my neighbor had put poison on. He admits he did and that he saw my dog over to his place that day. Could I make him pay for dog?—H. A. O., Elbert Co., Colo.

You can bring an action against your neighbor and make him pay for your dog.—Peters & Barker, Attorneys, Equitable building, Denver, Colo.

Practical Hints on Production of Baby Beef

SCHEDULES SHOW THE FEEDING AND MANAGEMENT OF CALVES

IN a general way the following are the advantages in favor of finishing cattle at younger ages rather than waiting an additional year or two before they are placed upon the market:

Young cattle make better gains than older cattle on the same quantity of feed. Yearlings can make 25 to 40 per cent more gain than mature cattle on the same feed. The quantity of feed necessary to make 100 pounds of gain increases with the age of the animal.

The herd of cattle on hand at any one time is smaller, since the breeder selling cattle as yearlings no longer has steers 2 or 3 years old on his farm. The surplus feed and pasture which becomes available when the cattle are sold before 2 years of age may be used for maintaining a larger breeding herd, and this provides for the production of a larger number of calves. By feeding calves as baby beef the money invested can be turned over in eighteen months or less.

Open heifers when finished as baby beef at 900 to 950 pounds sell as well as steers. As a general rule it is better to dispose of them at such weights, altho frequently well finished heifers weighing up to 1,050 pounds are not discriminated against. When they are over 2 years of age, however, they seldom sell as well as steers, because heifers and cows carry a great deal of bunched internal fat, which makes them less desirable on the market.

Well finished beeves, when fattened for market under 2 years of age, offer greater choice in the matter of selecting the date of marketing. The yearling of high quality can be fed either a somewhat shorter or longer time than first planned without any material change in bloom or finish. This is a decided advantage if the market is unsteady or weak. However, if market demand is steady, as is usually the case with this type of beef, the good feeder will endeavor to market his animals when their bloom or finish is at its best.

The average consumer prefers the size and quality of the cuts which are obtained from the carcass of a well-bred, highly finished yearling. In addition to high quality, thickness in steaks and other cuts of beef is desired by the consumer, and these can be produced more economically in the well matured yearling than in any other class of beef animal.

Markets are paying a premium for this type of beef, and the market for baby beef in recent years has been more stable than for any other class of cattle. During the last few years this class of beef has practically had a market of its own, and until packing centers can command a larger supply, relatively greater stability in prices for fat yearling beef may prevail. Prime baby beef usually commands a price equal to that of the highest grade of mature fat cattle. * * *

Quality and Finish

Calves to qualify as baby beef must have quality and finish. The consumer does not want the unfinished yearling, and the calf that does not have quality will not take on a high finish. Neither will the calf lacking in early-maturing qualities fatten during the latter part of the feeding period, but instead it will use most of the feed it consumes for growth. Keeping this in mind, the feeder should first determine whether his calves are good enough to compete on the fat-yearling market, and if he decides that they are not, they should be finished off on coarser feeds for a later market.

The wide, deep-bodied, thick-fleshed calf with short legs and an abundance of quality as indicated by fineness of hair, texture of skin, smoothness of flesh, and general refinement about the head and other parts of the body, is the type best suited for making prime baby beef. Uniformity in size, weight and color should not be overlooked, because such factors are an advantage in marketing. * * *

Fall-Born Calves

Most of the calves on farms in this country are born during the spring months, but in recent years quite a number of farmers have adopted the fall calving plan. The following seem to be the advantages of this system:

1. Calves born during the fall months are not bothered by flies, screw worms, maggots, etc., and hence they need less attention after castrating and dehorning.

2. The young calf needs no grass until weaning time. The fall-born calf can therefore suckle its dam during the winter months and when weaned may go directly on pasture.

3. The fall-born calf fits in with pastures somewhat better than those born in the spring. His first summer is spent on pasture, and at the end of this period he goes into the dry lot for finishing. On the other hand the spring-born calf must be fed during his first winter, and when pastures are ready he cannot be placed on them because he has reached the finishing period and should go into the dry lot.

4. The farmer who sells milk will derive greater profit when his cows freshen in fall, since milk markets are better during the fall months.

5. Finishing calves in the fall and early winter interferes less with other farm work than when it is done during the spring and early summer.

Some Disadvantages

The disadvantages of fall calving are:

1. In extremely cold climates calves born in the late fall will suffer from cold, and unless warm barns are available fall calving is not practicable.

2. More feed is necessary to maintain the cows when they are nursing calves, and during the winter months this will add somewhat to the expense of keeping the herd, since pastures are not always available.

3. Unless the farmer buys cows bred to calve in the fall he cannot make the change from spring to fall calving without losing six months of service from the cows.

Those breeders who have tried the fall calving plan seem to favor it highly, but it will not work to advantage under all conditions.

The accompanying schedules show the management and feeding of spring-born calves intended for finishing as baby beef in fifteen and eighteen months' periods respectively, and under corn belt conditions. The feeding plan can be varied to suit conditions and feeds grown. With our western feeds the gains will be practically the same as in the corn belt.

(This information is from Farmers' Bulletin No. 811, by S. H. Ray, entitled "The Production of Baby Beef." The bulletin also contains schedules showing the finishing of fall-born calves. Copies may be had free on application to the U. S. Department of Agriculture at Washington.)

Eighteen Months' Period

Month	Calves to be finished in 18 months	
Mar.	Born	Same as 15-month calf.
Apr.		Do.
May		Do.
June		Do.
July		Do.
Aug.	Wean	Do.
Sept.	Vaccinate, castrate and dehorn.	Do.
Oct.	do	Do.
Nov.		Stalk fields, meadows; corn, 4 lbs.; cottonseed meal, ½ lb.; silage, 5 lbs.; straw.
Dec.		Corn, 5 lbs.; cottonseed meal, 1 lb.; silage, 10 lbs.; oat straw, unlimited.
Jan.		Corn, 6 lbs.; cottonseed meal, 1 lb.; silage, 10 lbs.; oat straw, unlimited.
Feb.		Corn, 7 lbs.; cottonseed meal, 1 lb.; silage, 10 lbs.; oat straw, unlimited.
Mar.	Heavy feed; or pasture, with grain. In dry lot	Corn, 8 lbs.; cottonseed meal, 1 lb.; silage, 12 lbs.; oat straw, unlimited.
Apr.		Corn, 9 lbs.; cottonseed meal, 1 lb.; silage, 14 lbs, or pasturage; oat straw.
May		Corn, 10 lbs.; cottonseed meal, 1½ lbs.; silage, 14 lbs., or pasture; oat straw, unlimited.
June		Corn, 11 lbs.; cottonseed meal, 2 lbs.; silage, 16 lbs., or pasture; oat straw, unlimited.
July		Corn, 12 lbs.; cottonseed meal, 2 lbs.; silage, 15 lbs., or pasture; oat straw, unlimited.
Aug.	Sell	Corn, 14 lbs.; cottonseed meal, 2½ lbs.; silage, 12 lbs., or pasture; oat straw, unlimited.

Fifteen Months' Period

Month	Calves to be finished in 15 months	
Mar.	Born	With cows. On grass or milk.
Apr.		do.
May		do.
June		With cows. On grass or milk; begin feeding shelled corn or cornmeal, ½ to 1 lb.
July		With cows. On skim-milk or grass; cornmeal, 2 lbs.
Aug.	Wean	On grass with cows or on skim-milk; chopped corn, 2½ lbs.
Sept.	Vaccinate, castrate and dehorn.	Pasture; chopped corn, 4 lbs.; silage and hay if necessary.
Oct.	do	Pasture; chopped corn, 5 lbs.; silage, 10 lbs.
Nov.	Dry lot	Corn, 6 lbs.; cottonseed meal, ½ lb.; silage, 8 lbs.; oat straw, unlimited; clover, 3 lbs.
Dec.	do	Corn, 7 lbs.; cottonseed meal, 1½ lbs.; silage, 10 lbs.; clover, 3 lbs.; oat straw, unlimited.
Jan.	do	Corn, 8 lbs.; cottonseed meal, 1½ lbs.; silage, 12 lbs.; clover, 3 lbs.; oat straw, unlimited.
Feb.	do	Corn, 9 lbs.; cottonseed meal, 2 lbs.; silage, 10 lbs.; clover, 3 lbs.; oat straw, unlimited.
Mar.	do	Corn, 10 lbs.; cottonseed meal, 2 lbs.; silage, 9 lbs.; clover, 3 lbs.; oat straw, unlimited.
Apr.	do	Corn, 11 lbs.; cottonseed meal, 2 lbs.; silage, 8 lbs.; clover, 3 lbs.; oat straw, unlimited.
May	Sell	Corn, 12 lbs.; cottonseed meal, 2½ lbs.; silage, 8 lbs.; clover hay, 3 lbs.; oat straw, unlimited.

Drying Methods Explained

Three methods of drying fruits and vegetables are recommended by the experts. These are sun drying, drying by artificial heat and drying with air blasts, as before an electric fan. Trays for drying by any one of these methods, as well as tray frames for use over stoves or before fans, can be made satisfactorily at home. Frames and trays for use with artificial heat may be purchased complete.

Home-made trays may be made of side and end boards three-fourths of an inch thick and two inches wide, and bottom boards of lathing spaced one-fourth of an inch. If desired, one-fourth inch galvanized wire mesh may be tacked to the side and end boards to form the bottoms of the trays. Frames for use before fans may be made of wood of convenient size. Frames for use with artificial heat should be made of non-inflammable material to as great an extent as possible. As many as six trays may be placed, one above the other, when artificial heat is used.

In drying before a fan the number of trays that may be placed one above the other will depend, to a large extent, upon the diameter of the fan. In drying in the sun, trays as described may be used, or the products to be dried may be spread on sheets of paper or muslin held in place by weights.

Vegetables and fruits will dry better if sliced. They should be cut into slices one-eighth to one-fourth of an inch thick. If thicker, they may not dry thoroly. While drying, the products should be turned or stirred from time to time. Dried products should be packed temporarily for three or four days and poured each day from one box to another to bring about thoro mixing, and so that the whole mass will have a uniform degree of moisture. If during this "conditioning" any pieces of the products are found to be too moist, they should be returned to the trays and dried further. When in condition the products may be packed permanently in tight paper bags, insect proof paper boxes or cartons, or glass or tin containers.

Recipes for drying vegetables follow:

Spinach and Parsley—Spinach that is in prime condition for greens should be prepared by careful washing and removing the leaves from the roots. Spread the leaves on trays to dry thoroly. They will dry much more promptly if sliced or chopped.

Garden Beets, Onions, Carrots, Turnips, Parsnips, Cabbage:

Beets—Select young, quickly grown, tender beets, which should be washed, peeled, sliced about an eighth of an inch thick, and dried.

Turnips—Should be treated in the same way as beets.

Carrots—Should be well grown, but varieties having a large, woody core should be avoided. Wash, peel and slice crosswise into pieces about an eighth of an inch thick.

Parsnips—Should be treated in the same way as carrots.

Onions—Remove the outside papery covering. Cut off tops and roots. Slice into one-eighth inch pieces and dry.

Cabbage — Select well-developed heads of cabbage and remove all loose outside leaves. Split the cabbage, remove the hard, woody core and slice the remainder of the head with a kraut cutter or other hand-slicing machine.

Beet Tops, Swiss Chard, Celery and Rhubarb:

Beet Tops—Tops of young beets in suitable condition for greens should be selected and washed carefully. Both the leaf stalk and blade should be cut into sections about one-fourth inch long and spread on screens and dried.

Swiss chard and celery should be prepared in the same way as beet tops.

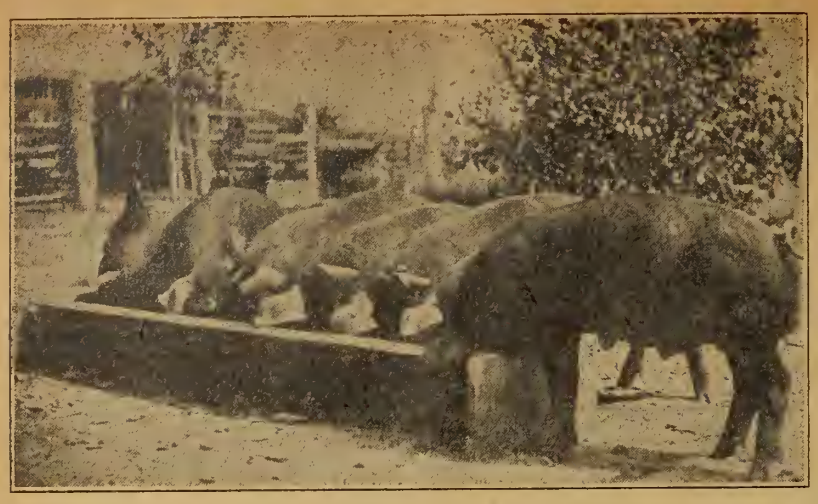
Rhubarb—Choose young and succulent growth. Prepare as for stewing by skinning the stalks and cutting into pieces about one-fourth inch to one-half inch in length and dry on trays.

Raspberries — Sort out imperfect berries, spread select berries on trays and dry. Do not dry so long that they become hard enough to rattle. The drying should be stopped as soon as the berries fail to stain the hand when pressed. Pack and "condition."

Here is a simple recipe for drying corn that comes from Mrs. R. L. Parker of Hays, Kan. Select corn that is in the dough stage. Put it into boiling water and cook it until it is tender. Cut it from the cob while hot. Spread it on muslin protected from flies and leave it in the sun for several days. When thoroly dry, it should be stored in sacks. When the corn is to be used it should be soaked over night in water, then cooked until tender and served like canned corn.

Feed for Turkeys

Answer to G. B., Thermopolis, Wyo.—Wheat and corn are the best grain feeds for turkeys; green food of some kind and milk will furnish everything needed for them. Turkeys are naturally rangers and when on range need nothing furnished but grain of some kind and the greater variety the better. Milo or kafir will take the place of corn, but if corn is a cheaper feed than wheat, wheat can be left out of the bill of fare if the turkeys have free range. Poults should have as much of a variety as possible; cracked grain and cracked corn, plenty of milk, table scraps and bread soaked in milk, but as with grown fowls, if the poults have range they are able to find much of the variety necessary to good growth.



Bacon Making on a Wyoming Farm

We Need Pigs as Well as Powder

BIG MONEY IN PORK PRODUCTION NOW

T. S. PARSONS, Agronomist University of Wyoming

MUNITION and powder factories are necessary in time of war and must be worked to their fullest capacity. The farm, too, is a factory, and if it is to be successful, it must be handled in a businesslike way and made to produce to its fullest capacity in every way. All of the departments of the farm must be coordinated and one part fit into the other so that there will be a well-organized whole.

Pork production is one of the best paying lines of farm work at the present time. There is a shortage in hogs as in other farm animals, and pork has been bringing unprecedented high prices for some time and will undoubtedly bring still higher prices before there is a return to normal.

Only an increase in the number of hogs grown and a lowering of price of feeds will lower the price of pork. These conditions cannot be brought about in a short time. It will be at least two years before either feed or meat prices come back to anywhere near normal. Even if the war should close soon, there will still be great demand for food products. The European nations, including Germany, will want American pork. Greatly increased production along all agricultural lines is about the only thing that will bring about a lowering of prices.

Hogs can be increased more rapidly than any other class of live stock. With a little extra care a sow can produce two litters of pigs a year as well as one. These pigs can be put on the market at six months of age, weighing at least 200 pounds.

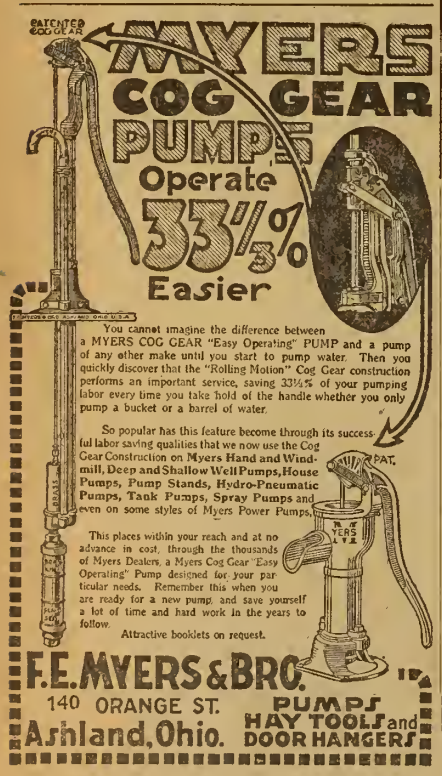
If feed has to be purchased at present prices, however, it is doubtful if a profit can be made on pork, but where practically all the feed is grown on the farm, and with alfalfa or sweet clover for pasture, a good profit can be made. Corn, where it can be grown, barley and field peas are ideal hog feeds. The grains can be ground and fed or the crops hogged down. Some excellent records have been made along this line by the boys of Wyoming in their Pork and Crop Club work. Pork has been produced for 5 cents a pound, which is a remarkable showing.

The San Luis Valley of Colorado has long been famous for its pea-fed pork. Wyoming can do as well. Peas and barley make good crops at the higher altitudes of the state, and are practically equal to corn for making pork.

For hog pasture nothing is better than alfalfa or sweet clover. Both of these crops do well in all parts of the West. The sweet clover makes a very valuable pasture on the dry farm. The legumes, supplemented with a little corn or other grain, is the best possible ration for the growing pig, and hogs on alfalfa or sweet clover pasture can be fattened more cheaply and in a shorter time than when they are kept in the dry lot.

Climatic conditions in Wyoming are ideal for hog raising. The pure air and bright sunshine found at the high altitude keep the pigs healthy and in a thriving condition. Hog cholera is unknown except where it is brought in with corn or infected cars from other states. In most years sows can farrow at almost any season and there will be but little loss. The writer at one time visited a ranch on the Laramie plains and saw 300 pigs from one to three weeks old on the fifteenth of November. All these pigs were as lively as crickets, and at the same date 400 hogs were running out, picking up their living from the harvested grain and pea fields. This, too, was at an altitude of 7,200 feet above sea level. There are few sections in the country where this can be done.

There is no live stock on the farm that will bring a good profit in as short a time as hogs, unless it is poultry. Hogs and poultry fit well together into the farm scheme. Indeed, these two, with the cow, are the mainstays of the farm, and in these days when "preparedness" is the slogan along every line, the hen, the hog and the cow are important factors, and their production must keep pace with the production of war materials in order that the war may be brought to a successful termination.



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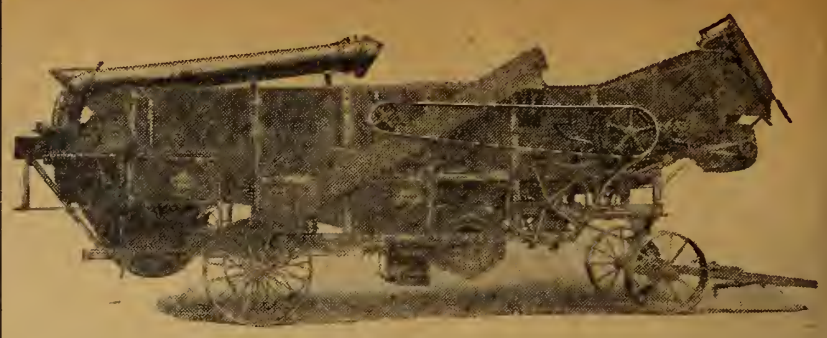

WHEN BEANS ARE AS GOOD AS GOLD

INTO the hopper it goes, a great tangle of vines and roots, leaves, soil, sand, pebbles and pods of all shapes and sizes, ripe and unripe.

Out thru the sifters at the bottom fall the sand and soil and stones; out at the rear or at either side of the Thresher come the vines and straw, out at the measure comes a steady stream of beans or peas, every one unbroken, clean and marketable, a money-making crop for the owner of a

HUBER BEAN and PEA THRESHER

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CRITICIZES THE MERCHANTS

Fort Morgan, Colo., May 16.

Mr. E. M. Ammons, Denver, Colo.

Seeing your letter to the business men in Western Farm Life of May 1st, you speak about the friendship existing between the business man, professional man and the farmer. As far as I can see there is no friendship.

The locality in which I live has, in seven years, been turned from a raw prairie to fertile fields of grain. It has been an uphill job for most men, where men have had to deny themselves and families the little luxuries that make life worth living. All these men would be anxious and willing to extend their cultivated ground in this war crisis had they the means. It is not so much a matter of seed as it is the almost prohibitive price of feed for their work animals.

Some of us have pushed our credit at the bank almost to the limit, yet if we ask the merchant to extend us credit until harvest time we are coldly turned away.

It seems to me that men in business are using a very shortsighted policy when they turn away the man who will, after harvest, make them the profit from which they exist.

Putting aside all patriotic feeling, one would naturally suppose that they would try to build the country up by extending credit to the worker who is working the land.

Feed is scarce here owing to last year's drouth and men are laying their work animals off a good portion of the day, owing to the scarcity of feed. One hundred dollar's worth of feed now would mean 25 or 30 acres of wheat put in this fall to almost every man in the neighborhood.

I congratulate you on your perception of conditions and would like to see your letter published in every weekly and daily in the state, for such a letter, coming from a man in your position, would have a great weight in influencing business men.—A Farmer, Morgan County.

THIS CAMERA
FREE

To Western Farm Life Boys and Girls

There is nothing that you will get so much pleasure or enjoyment out of as you will from the dandy pictures you take with this genuine "Eastman" **Camera.** Every one of you should have one of these excellent Cameras, and I have fixed it up so you can get this Camera absolutely FREE. Of course you want one of these Cameras, so just drop me a letter or a postcard today and say, "I want one of the Genuine Eastman Comeras," then I will tell you how you can get it, simply by doing me a little favor and without its costing you a single penny.

Let me know as quick as you can, as I may not be able to give these Cameras away after a certain time.

Western Farm Life
B. H. Barber, Manager Camera Club,
Denver, Colorado

Lory Refuses an Increase

E. M. AMMONS

Dr. Charles A. Lory, president of the Colorado Agricultural College, declined an increase of salary tendered by the board of control at its recent meeting. He did the same thing some years ago.

Dr. Lory is known by everyone as a

Dr. Charles A. Lory
President Colorado Agricultural College

very hard worker. The days are never long enough, and whatever the personal sacrifice, he tries to respond to every call made upon him. He has built a splendid organization. To every detail of business he gives personal attention. The institution has a great variety of departments and the budget system of financial control developed by him and his executive committee is a marvel of efficiency. It is well known by those best acquainted with the affairs of the college that both Doctor and Mrs. Lory have contributed unstintingly to the building of all branches of the work, and that little or nothing has been left for themselves. To show some appreciation, the board made the offer of a raise in salary. In response Dr. Lory referred to the fact that the men and women in the employ of the institution were still on the same pay basis of 1910 and 1912, and that with the greatly increased cost of living they were really not receiving as much compensation as they did four or five years ago. He insisted that whatever could be spared must go to them.

With such a spirit it is no wonder the Colorado Agricultural College has made such a marvelous growth and achieved a position of such marked influence in the development of the state.

HEALTHY WHEAT SMUTTED WHEAT

Grain Smuts

The U. S. Dept. of Agriculture recommends the use of Formaldehyde for cleansing seed grain before planting. It guards against the development of stinking smut and loose smut in wheat—

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Dinner for Ten at $1.75

A man once said to his wife: "Do you know what I wish? I wish we had twins."

"John," she gasped, "we couldn't take care of them. It takes all of our time now to take care of one."

"That's just it," said John, "since it takes all of our time to care for one it couldn't possibly take any more time to care for two."

The spirit of this yarn is the basis on which we shall have to work out our system of housekeeping to meet the H. C. of L. It took our entire income before and it cannot possibly take any more now to provide for the family.

Then the question arises, shall we alter the quality or the quantity? Seemingly there is no chance to lower the cost. What is, IS, and if we wait for the numerous food probe committees to make it "ain't" before readjusting our house management, we may find ourselves in the toils of both debt and hunger.

When flour was $3 a hundred we bought a sack, made so many bakings, and ate so many loaves. If flour should go to $10 we must still buy a sack, make just as many bakings and eat just as many loaves. The same principle applies to all the necessities, but not to the luxuries.

The rent must be paid, enough clothing worn to avoid the long arm of the law and sufficient food eaten to keep life in the body. When I think of the increased cost of food that old song comes to me, "Johnny Get Your Gun"—and it isn't the Germans I want to shoot either!

It all resolves itself into the conclusion that about the only place in which a sensible housewife can economize is in her buying and managing. Your grocer can detect your ability—or lack of it—as a house manager. Not long ago I heard a grocer say: "When a woman comes in here, looks around, and then says, 'I don't know what I want; I just feel like having a change and don't know what to get,' I know she isn't very hard up."

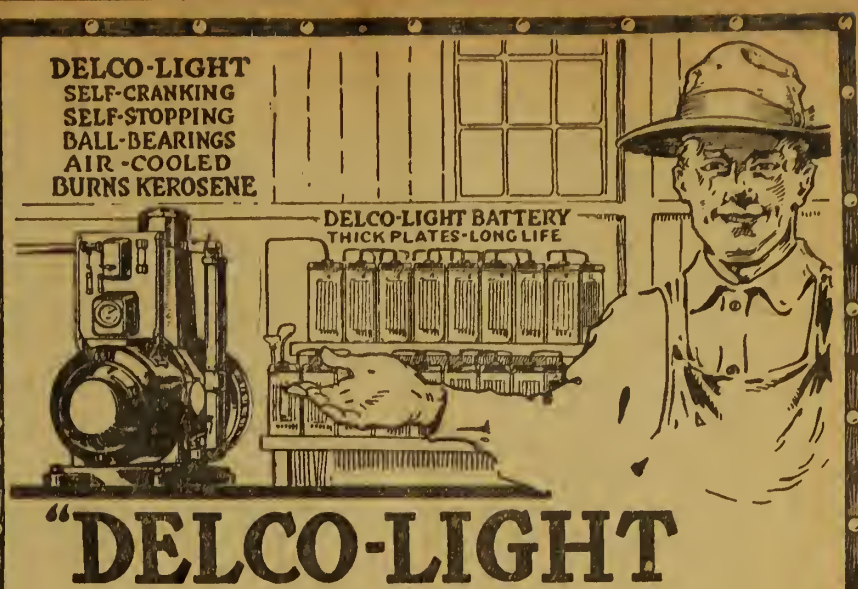
Learn the food value of what you eat. It isn't necessary to take a course in domestic economy to do that. Use your common sense. A satisfying meal is the best index of a balanced ration. And if there are men folks in the house you, as the housewife, will hear whether or not the meal is satisfying.

Horsemen have a very simple rule for feeding their animals—one kind of food for a filler and one for a feeder. I don't know what they call it, but that is my way of expressing it. I believe it can be so managed that the same food both fills and feeds the human animal.

Take, for instance, meats: Bacon is selling today at 40 cents a pound; pickled pork at 25 cents a pound. We all like the flavor of well-cured bacon, but by careful freshening, the salt pork may be made to serve in almost every way that bacon has been serving. Ham costs 30 to 34 cents a pound and ham hock 15 cents. Therefore, use ham hock where you can for boiling and slicing, altho it will not take the place of ham for frying.

Here are two plain home dinners that may be served to ten people at almost any time of the year and in almost any locality, city or country, which at present prices will cost only $1.75 for each meal:

Stuffed steak or round steak with dressing	$0.60
Mashed potatoes	.30
Apple and celery salad	.25
Bread and butter	.20
Sally Lunn, with fruit sauce	.20
Coffee	.08
Incidentals (salt, sugar, pepper, etc.)	.12
	$1.75



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No. 2

Boiled ham hock	$0.60
Potatoes in jackets	.25
Lettuce or lima bean salad	.15
Bread and butter	.20
Bavarian cream	.35
Coffee	.08
Incidentals	.12
	$1.75

These are dinners at 17½ cents per person. Can't be done at present prices? The answer is: I have to do it right along.—Josephine Lee Ferguson.

Boys' and Girls' Old Glory Club

The cut herewith presented is a picture of the first "Old Glory Club" organized for boys and girls that we know anything about. The teacher of this particular school in a secluded locality in the mountains, about 25 miles west of Trinidad, is an exceedingly patriotic gentleman of mature years. He has inspired the children of the school with the idea of service to their country. He has made it plain that if they will work together, they can help make comfortable some of Uncle Sam's boys who must necessarily take an active part in the great war now going on.

Mr. De La Mater's idea is for each child in the club to grow an extra two or three rows of vegetables in the garden, raise an extra brood of chickens, or in some other way do a little more than ordinarily, and turn the proceeds over to some committee which could take charge of the funds and use them for the benefit of war sufferers in America.

The picture represents the Old Glory Club standing in front, parents in rear and the president of the club in the act of raising the flag. On this particular day, patriotic exercises were held, a new flag-pole was set, a new flag presented to the club and the flag raised for the first time at this picnic gathering, held on June 8th. The enthusiasm was splendid. The young people took such a keen interest that we are sure they will be better citizens because of this project, which they have started largely on their own initiative.

The matter is given this publicity because it seems as tho the idea is so good that other sections of the state might with reason take it up, and thru this means very largely increase the funds of the Red Cross or some other helpful organization during the present crisis.—Charles E. Smith, County Agriculturist, Las Animas County.

Long finger nails often are the cause of kicking. Milkers should be careful of their nails, and should also watch carefully any cracks or sores that come on a cow's teats. By use of pure vaseline when a sore or crack starts, a cure is soon effected.

Burro Canon Old Glory Club

Western Farm Life

Issued the 1st and 15th of Each Month.

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World's Food Requirements

What the allied nations require in the way of food supplies is summarized by Herbert C. Hoover in the statement given below. Our home problem in foods is not so much one of quantity as of proper distribution and the elimination of speculation. These things must be adjusted within the next two or three months if this country is to be spared serious internal difficulties next winter. There is every prospect of a peaceable settlement, even if it shall be found necessary to convict a few food speculators of treason. The greater problem is that of supplying the nations allied with us in the war on autocracy. On this point Mr. Hoover is quoted as follows:

"Great Britain normally raises about one-fourth of the grain she needs for her bread, France about one-half. The additions necessary to make up the total quantities needed are brought in from various other countries. But in these abnormal times the native production of the fighting allies is greatly reduced by the withdrawal of man power from the farms to the armies and munition factories; also by reason of late frosts this year's crop in the United Kingdom, France and Italy is a partial failure. Opportunity to import from certain grain-raising countries, as Russia and Roumania, is entirely lacking and from certain others, as Australia, South America and India, is greatly lessened on account of the long haul, for which ships cannot be spared.

"All those conditions throw on North America the brunt of the burden of supplying our co-belligerents with the human and animal food necessary to maintain their great armies in fighting condition, as well as to keep alive and efficient the families of the fighters and the great industrial army at home.

"The requirements in cereals alone for the next year of the allies, and the few neutrals whose needs must be given some consideration, are a billion bushels. The needs of meat, fats and sugar also are enormous. Native production and imports from other countries can meet but a part of these requirements; what is left must come from us, yet this amount is far beyond any surplus that we shall have if we try to maintain our normal consumption. Our wheat prospects for this year are not encouraging. A reasonable forecast would indicate a crop of between 650,000,000 and 700,000,000 bushels. We have never exported more than 500,000,000 bushels of cereals in a year, yet the needs abroad are twice that."

✦ ✦ ✦

A Story of Success

We often wonder, when we hear of a farmer who has become wealthy, just how he did it. An interesting story in that line comes to us from Illinois. It is told by George Frerichs and it carries its own moral. Mr. Frerichs landed in this country thirty-five years ago with $27 in his pocket. He has raised a family of eight children and today owns 700 acres of land which he considers worth $300 per acre. How did he do it? Careful livestock farming is the answer. An extract from this story, as he told it to Wayne Dinsmore, secretary of the Percheron Society of America, follows:

"To grow big crops it is necessary to have rich soil and to have land properly tilled. After that comes the careful preservation of the ripened product, grain, hay, or whatever it may be. Rich soil is made where manure and leguminous roughage are found in abundance. Livestock farming provides for both of these. We ordinarily have around 300 acres of small grain to thrash, and instead of seeing how much of this straw we can have on hand the next spring, we see how much of it we can use. We sell straw to teamsters in Gilman near by at $2 a load, and they return us a load of manure when they come for more straw. We bed all our livestock generously during teh winter, so that we usually have little straw left the following June. We keep a good many horses and cattle, which makes a good deal of manure, and by using plenty of straw we are able to save this manure and get it onto our fields, instead of leaving it to deteriorate or to be lost entirely around the barn lot. Because we need lots of alfalfa and clover hay for our Percheron horses and Shorthorn cattle, we have an abundance of leguminous roughages to keep up the fertility of our land. Here again maintaining the productive power of the soil and the growing of livestock work together most advantageously. The more livestock we keep the more of this kind of feed we need, which means more nitrogen returned to the soil from whence it came. Livestock farming, rightly carried on, never robs the fertility of the land, but always adds to its richness."

✦ ✦ ✦

About "Joseph's Plan"

Commenting on the foolish practice of some Oklahoma farmers in selling their kafir corn in the fall at 40 or 50 cents a hundred and buying other grain a few months later at five times the price to feed their stock, J. E. Payne of the Frisco railroad wishes for "Joseph's plan" for storing the feed during fat years to use when the lean years come. For its day and age Joseph's plan was efficient. It not only fed the Egyptians in time of a seven year famine, but there was grain to sell to other nations. Joseph, of course, had the particular advantage of advance information regarding the seven fat years, to be succeeded by the seven lean years. Not even the Weather Bureau, with all its modern facilities, can give us information regarding prospective moisture conditions so far ahead. In fact, the bureau often fails in its day-to-day forecasts, consequently we farmers have to take the rainfall as it comes.

It is just this condition, however, that should make us think of something that would answer the purpose of "Joseph's plan."

Nothing yet invented does the work so well as the silo. Even in the dryest year on the dry farming plains, forage crops yield an abundance of feed, a large part of which can be conserved in the silo for winter feeding. And the farmer who hasn't the means for building a high silo can provide himself with one of the pit type at a trifling cost. The man who has but one pit silo should have two or three, but one silo can be made to serve for a whole winter's feeding. Forage can be stored dry and, when the silo is empty, can be cut and put into the silo, with its own weight in water to freshen it. This silage is not as good as that fresh cut, but it is greatly superior to dry forage. There are other ways which Joseph never thought of for conservation of food and feed that are not in general practice, simply becaust the farmer thinks in terms of one crop season, instead of planning for permanence. For most of us there should be a complete revolution of thought in regard to the farm. Instead of holding in mind the ideal of making enough money to retire and then passing the farm on to a tenant, or of selling out, we should assume a sense of our responsibility toward humanity. That includes not only doing our share in the world's food production, but our duty toward posterity in preserving fertility and building up the soil, instead of draining it in the effort to make money quickly.

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World-Wide Independence

Governor Moses Alexander of Idaho voices a thot that should give every American citizen a broader conception of the duty and responsibility that the war has brot us. He says: "The people who have grown to be the most powerful people in the world under that emblem of liberty, the Stars and Stripes, will regenerate and emancipate mankind, and after July 4, 1917, we will not celebrate the Fourth of July alone in the United States, but the whole world will join us to make it emancipation day for the downtrodden of the world."

Just what is before us in the interval before another Independence day comes no man can say. This we know, it is to be a period of self-sacrifice; a time when no man should stop to count the cost of liberty. The ideal set forth by the Governor of Idaho cannot be achieved by oratory or by the waving of the Stars and Stripes. The argument must be driven home by cold steel; by war, by pestilence, by ruin and devastation. It is not a pleasant prospect to contemplate, but let us not shut our eyes to the truth. We are in the war up to the hilt. It is the American way. No other spirit will win. The composite brain that planned and executed the sinking of the Lusitania, that sanctions the wholesale murder of women and children by dropping bombs from the air, is capable of anything—capable of cruelties beyond the imagination of people nurtured in an atmosphere of peace and humanity. Therefore let us be prepared, physically and mentally, for any shock, and let us make no reservation either of life or means when we pledge our loyalty to the nation.

Providence and the Farmer

The other day this letter came to the editor's desk: "I received your letter and in reply I will say, all the papers in the world do not make a crop grow without rain. I have found out in my forty years' experience the blessing has to come from God. So, therefore, please discontinue my paper."

Let us turn to I Corinthians 3:6 and read what St. Paul said: "I have planted, Apollos watered; but God gave the increase."

It is not stretching a point to apply this statement concerning the spiritual planting and growth to things material. When we do that it looks as tho this matter of success on the farm is a co-operative scheme, in which man has an important part to perform.

We shall not attempt to change climatic conditions, or to "make a crop grow without rain," but we have and shall continue to advise our readers how to make the best use of the moisture that nature gives us. We take such advice from the experience of other farmers and from the experimentation of the theorists. Our friend who discontinues has apparently reached a point, after forty years of experience, where he believes that his own efforts count for naught against a sometimes adverse judgment of the Deity. We think he wrongs himself and his Creator. Without delving into forbidden topics—religion is one of them—we cannot imagine any condition of the weather that would suit all of us at the same time. Even the Creator, if we could think of Him as personally managing our mundane affairs, might pause at a task so stupendous, not to say impossible, as blessing every farmer with every rain that falls, or every dry spell of good growing weather. It can't be done. There are occasions even on the same farm when the rain falls on the corn just in time to save the crop and ruins the alfalfa, which has just been cut and raked into windrows.

The farmer who uses reason and common sense is none the less relying upon the blessing of God when he reads a reliable farm paper that brings him informative matter about agriculture in his own region; that tells him how to conserve the moisture to carry him thru a drouth; that brings to his notice the wares of responsible makers of implements, farm machinery, utensils, and breeding stock; that publishes news of what other farmers are doing; that keeps him posted on the marketing of his produce and seeks to help him increase his income by safe farming. The editor himself relies on the blessing of God to say the right thing at the right time, and he believes that his paper can be and is an humble and honest instrument in the hands of Providence to help the subscriber succeed by well-directed, intelligent effort.

Lack of exercise causes the reasoning faculty to rust, and nothing serves so well to keep us mentally alert as reading about our neighbor's constructive efforts. King's "Farmers for Forty Centuries" is a remarkable story of the success of the Chinese in keeping up fertility thru four thousand years, but the Chinese did it that way because their fathers did. There has been more real progress in the last half century of American agriculture than in all the centuries since the first Chinese made the first compost heap, or scooped the first shovel of silt from the bottom of a canal to put on his soil, because the American farmer has had books and farm journals to arouse his thinking capacity. He does what he does because he has a reason for doing it, not because of tradition or precedent.

Were we to accept literally what our friend in his letter recommends and fold our hands while waiting for a blessing, bitter disappointment would follow. "The Lord helps those who help themselves" is particularly applicable to the business of farming.

Alvin T. Steinel

Managing Editor.

New Book On Alfalfa

A new book on alfalfa has just come from the press. The volume is entitled "Field Management of Alfalfa," and is a complete treatise on the subject. The work comprises some sixty pages and is profusely illustrated with excellent halftone engravings. Anyone who is at all interested in growing the "queen of forage crops" should by all means secure a copy of this informative book, which is quite out of the ordinary. The author is A. M. Ten-Eyck, director of the agricultural extension department, Emerson-Brantingham Implement company, Rockford, Ill.

A fresh young farmer tried to kiss a summer girl who was spending her vacation in his home town last summer. He declared he had never kissed a girl in his life. She indignantly told him that she was no agricultural experiment station.

A subscriber wants to know which is preferable, Sudan grass or cane hay. Sudan makes a finer stemmed hay, is just as palatable and has about the same feeding value as cane hay.

Comment by Farmer Putnam

OUR MISSOURI FARMER ATTENDS A MEETING OF THE DENVER CIVIC ASSOCIATION

Denver, July 10, 1917.

FOLKS, I want to tell you-all about a good time I had with a lot of town folks in Denver. You know I been kind a-roastin' them city fellers fur their hurrah work in increasin' production, which us fellers in the country is supposed to do, so one of 'em got me off to one side and sez: "See here, you old rascal, what do you mean by throwin' the harpoon into the Denver Civic association all the time? We hain't done nothin' to make you mad. We want you to come to our meetin' at the Albany hotel next Friday and see us git Dave Thomas initiated as secretary of the Farm Bureau."

Well, knowin' Dave purty well from Longmont, I thot I'd go and see what them city fellers does when they gits together fur a palaver about farmin'. I had a good time alright. They starts off with a swell feed of trout, but the taters was awful poor. They had 'em cut into fine strings like spagutta and fried hard, so they set my teeth—what few I got left—on edge. Stuart Sweet was settin' with me and he sez that was the way to fix spuds to eat with fish; that them city folks allus served 'em that way when they had fish. Let them what likes 'em eat 'em. When I want spuds I want spuds, not shavings.

Well, after the feed Mr. Cass Herrington got up and started the speakin'. I kind-a took to Cass, tho I hain't never met him. Just sizin' him up and listenin' to his talk he could pass fur a Missourian. They hain't nothin' showy about him; he's just a plain kind of a feller that talks straightforward and looks you square in the face and don't waste no words and gits by without rufflin' you up—kind of a neighborly feller. He should ought to been a farmer, but I reckon some folks just nachully git in the wrong business. He's a corporation lawyer. Now folks I know what you-all are a-thinkin' but don't let us misjudge the man. He's makin' garden this year and maybe next he'll mend his ways and move out on a farm.

The dinner was arranged fur all of us to meet Dave Thomas and everybody was there exceptin' Dave. He got stalled by a engine jumpin' the track on the way down from Longmont. Another of them German plots, I guess.

Fred Johnson was called on by Cass to explain about the plans of the Bureau and he sez we was a-goin' to have the biggest crops in Colorado that we ever had. I hope that's true, because if it is, it means that it's goin' to rain soon. Fred sez we all got to go back to the old days of our grandmother's celler. He sez he kin smell his grandmother's celler yet. I reckon it smelled moldy like most of them cellers back east. That ain't what he was referrin' to. He was a-thinkin' about that cider barrel—and a-thinkin' hard. I reckon that's a purty good suggestion that'll solve this bone dry problem fur some of us in Colorado. The government is all the time wantin' us to preserve things and I guess conservation of windfall apples is servin' our country. If we kin git the kags there'll be plenty of cider put up this fall.

Fred sez the trouble with many people is they intend to put in coal and they won't have no room in their cellers fur jellies and such. His little talk about the cider may set some of them city folks to thinkin'—specially the men folks. I reckon Fred's been talkin' that over with some of the rest of the club members, as patriotism is foremost in our conversation nowadays.

When he got thru Mr. Kerr, the U. S. market bureau, was called on to speak. He give us some figgers that made us set up and take notice. He sez if Fred's predictions fur a big crop come true we're goin' to have $150,000,000 worth of food products in Colorado this fall and it's goin' to be a job to market things that won't keep. The West slope is figgerin' on about 3,000 cars of peaches, which is almost a sure thing and when peaches gits ripe you cain't keep 'em long. They ain't no big canneries and no big dryin' plants, so everybody has to do his part in eatin' and puttin' up peaches. Denver is goin' to have a peach week, and a cherry week, and a potato week, and a bean week, and a apple week and so on. Mr. Kerr sez we kin all do our part, by cannin' the perishables and layin' up potatoes and root crops in cellars or pits dug in the yard.

The business men in Denver that handles cannin' supplies is goin' to cooperate with the housewives and sell 'em supplies at the right prices, and the producers is goin' to see that the stuff is shipped to market on the right terms and in good shape. It's a good plan and I hope everybody'll help make it a go, because the Denver people kin do a hull lot fur us farmers if they'll turn in and demand that they git home products. Lots of people in town don't know we make good cheese in the mountain states. I was a-lookin' fur some Colorado cheese in a Denver store onct and the clerk sez, "We don't keep Colorado cheese; we got a better article here made in Wisconsin."

That kind of talk don't sound right. I know we don't make enough cheese in Colorado to supply the home trade, but them clerks should be taught to apologize when their stores don't keep home-made products, instead of tryin' to run 'em down. I hope Dave Thomas will kind-a line up the stores on this as well as the consumers. Let the stores push home growed foods all the time and not only fur one week.

This ain't no selfish talk neither. Fust of course we need to keep the money at home if we kin, but second we got to remember that every pound of food we kin produce and sell at home saves freight charges, relieves them overloaded railroad cars and turns loose products made in other states fur shipment acrosst the water to the soldiers and the people of Europe. But I'm furgittin' to tell you-all what was said at the meetin'.

They was a woman talked. Her name was give as Mrs. Hallett and she spoke fine. She sez, "The United States is the commissary department of the world and of the war." She got to talkin' about our grandmothers too, but along a different line from Fred. He was thinkin' of that celler full of goodies, but she sez we oughta git grandmaw to give us some of the old recipes fur tomato ketchup, pickelilli, andsoforth, and we ought to git out our knittin' and knit sweaters and sox fur the soldiers while the preserves is cookin'. I reckon that's purty sound advice, considerin' that it comes from a woman. It's surprisin' how sensible some of them town wimmin is gittin' to be—society wimmin too. This war is sure havin' a soberin' effect on all of us and before it's over we'll understand each other a hull lot better.

City folks is a well meanin' lot and us country people hadn't ought to be so suspicious when they're tryin' to do us good.

THOMAS JEFFERSON PUTNAM.

Letter From the Land Bank

The following letter to Western Farm Life from President Dan F. Callahan of the Federal Land Bank at Wichita, Kan., will be of interest to those of our readers who have joined National Farm Loan associations, or who expect to take advantage of the federal farm loan system:

Your kind letter of June 30 was handed me this morning by our secretary. It gives me pleasure to say to you that we are now thru the organization period and in shape to put business thru rapidly.

I expect to personally spend a good portion of my time for the next thirty days between Colorado and New Mexico. We have doubled our force of examiners in each state and expect to relieve the situation there quite rapidly.

Please convey to applicants for loans the fact that we are willing and want to help them, but that it is absolutely necessary that they hold the values of their land down to a fair and equitable basis. We have no desire to purchase these lands. We want to assist the farmer and to help him, but they must realize the fact that the success of this entire system depends absolutely upon our using careful and conservative judgment.

We are furnishing the farmers in your territory with money at a rate of about one-half of what he is paying at the present time. Our bonds have to be marketed and sold thruout the East. We must not give our competitors any chance to criticize this system and to scatter broadcast that we are making loans on these lands which are in excess of 50 per cent of their actual productive value.

This low rate is hinged absolutely on the making of careful and conservative loans and farmers should realize that it is our sole aim to protect for them the hen that lays the "golden egg."

If we should handle this bank in a way that is hazardous and give the system any chance whatever to fail they are the ones and the only class of people alone who would suffer therefrom.

We, as officers of this institution, are merely their employes and have only their interests at heart in the careful handling of this system.

Our one desire is to further agricultural development of the Ninth district, comprising your good states of Colorado, New Mexico, Oklahoma and Kansas.

(Signed) DAN F. CALLAHAN
President.

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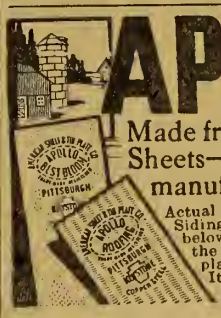

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Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and thru the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Mites in Cellar

Answer to A. S., Lincoln county, Colo., regarding mites in cellar:

Usually the mites are rather easily destroyed with sulphur either as a powder or in liquid form, and I am somewhat surprised that the whitewash, if quite thoroly applied, has not been sufficient to keep them in control. Am inclined to think if you repeat the whitewash a time or two and apply it by means of a spray pump, so as to thoroly drive it into the crevices about the cellar, you will find this as satisfactory a remedy as you can use. In orchard treatment we use either the lime sulphur solution or powdered sulphur, the latter usually as a spray in which we mix a pound into about three gallons of soapy water. If you find the lime does not give the results, I would recommend a thoro dusting or spraying with the sulphur. If used dry, try to get Atomic sulphur. If you cannot get it, use flowers of sulphur, and by means of a bellows duster, thoroly treat all parts of the room and repeat once a week, if necessary, for a time. It would be necessary, of course, to remove the milk when the applications are made.—C. P. Gillette, State Entomologist.

Probably Plant Lice

Would like to know how to get rid of black ants in strawberry beds and around otber berry bushes. I set out new strawberry plants and they ate the leaves as fast as they grow. Please let me know soon, as I believe they will kill them if I don't get them killed out.—N. B., Olathe, Colo.

I am quite surprised that the ants should be destroying your strawberry plants, and wish very much you could send me a little pasteboard box containing a few of the eaten leaves along with the ants that are doing the damage. I wonder if your plants are not infested with lice. If so, the ants are present because of the sweet secretions of the plant lice, upon which the ants feed. You could probably drive the ants from your strawberry plants by thoroly spraying or dusting with insect powder, also sold in the market as Bubach or Persian insect powder, or Pyrethrum. A spraying with "Black Leaf 40" in the proportion of one part to about 800 parts of water would probably drive the ants away, but would not kill many of them. I am sending you a bulletin giving further information concerning insect control. —C. P. Gillette, State Entomologist.

Vitality of Seed Beans

How long can seed beans of the ordinary commercial varieties, like pintos, be kept and not lose their vitality? Is it safe to hold them more than two seasons?—F. E. W., Briggsdale, Colo.

Just how long beans will retain their vitality is not known, but if kept dry it is known that they will keep their vitality for three or four years at least. If stored in a moist condition the vitality deteriorates very quickly. If thoroly mature and dry when they go into storage, the vitality will last a considerable period.—Alvin Kezer, Chief Agronomist, Colorado Agricultural College.

Ascertain Weight of Cattle

Answer to B. E. T., Routt county, Colo.: To ascertain the weight of cattle: Measure the girth close behind the shoulder, and the length from the fore part of the shoulder blade along the back to the bone at the tail, which is in a vertical line with the buttock, both in feet. Multiply the square of the girth, expressed in feet, by ten times the length, and divide the product by three; the quotient is the weight, nearly, of the fore quarters, in pounds avoirdupois. It is to be observed, however, that in very fat cattle the fore quarters will be about one-twentieth more, while in those in a very lean state they will be one-twentieth less than the weight obtained by the rule.

Cow Did Not Clean Well

Would like to get a little information in regard to Holstein milch cow. The cow was sick about two weeks ago. She seemed to be in great pain, would stand and kick forward. Seemed worse in the evening and better in the morning. Her udders got sore, almost impossible to milk her. There was also a discharge. I bought this cow in Denver. She had a calf the night before I bought her and the calf died. This cow is black and white spotted, and I noticed this evening the white spots on her hide are dry and hard, seem to be dead. In fact, the hide is hard; it is cracked in three or four different places. She walks as if she is very sore across her hips, but keeps up on her milk good. She eats good, but don't seem to gain flesh. I had a veterinarian, but he didn't seem to know what ailed her. —J. M. K., Grand Co., Colo.

The discharge and other symptoms indicate blood poisoning from absorption of septic material from the womb. It frequently happens that a portion of the placenta (afterbirth) is retained and the inevitable result is putrefaction and absorption of septic products. This results in a very high fever, sometimes with cracking of the skin, inflammation of the udder, congestion of the lymph glands, lameness and of course an escape of putrefactive material thru the vulva. The womb should have been flushed with a warm salt solution (one ounce to a gallon of water) twice a day until the womb was clean. Flushing the womb sometimes causes severe straining and disastrous results and must be undertaken very carefully. It is better in such cases to employ a veterinarian. The milk from a cow suffering from septicemia is not fit to use. If the condition of the cow is much improved, as your letter would seem to indicate, it means that the womb has cleaned itself and you had better not interfere.—Geo. H. Glover, Colorado Agricultural College.

Horse Has Sweeney

Answer to W. M. C., Douglas county, Colo.: The case you describe is what is commonly known as "sweeney," or atrophy of certain muscles of the shoulder. This frequently results from working young horses on soft ground, especially with ill-fitting collars. The horse will not be fit to work before next fall, unless it be to pull a light vehicle on the road with a breast collar. Use mild stimulants over the wasted muscles. Do not blemish the shoulder by using blisters that are too strong. A seton applied properly is very effective. Drive the horse to Colorado Springs and consult a veterinarian.—G. H. G.

Outlawing of Debt, Etc.

(1) When is a debt considered outlawed in this state?

(2) A buys a harness from B March 5, 1914. A did not pay B for the harness and has not done so yet, altho B has asked A for it several times. A has disposed of the harness and owns no property. How can B get his money?

(3) Are notes ever outlawed in Colorado? Some years ago A gave a note for $400 to B. The note was not paid when it became due. A paid B $100 on the note but did not renew the note, as A and B were friends. Nothing was given in security with the note. Some months ago B, the holder of the note, died. How can B's widow collect the balance due from A? Can she attach any of A's property for payment of the note? Since giving the note, if A has turned all of his property, consisting of ranch land and livestock, over to some other member of his family, can B's widow attach any of the property for payment of said note?—R. F. Delta Co., Colo.

(1) In Colorado a debt "outlaws" in six years, but a part payment or a new promise will stop the running of the statute of limitations and the six years will be figured from the date of the part payment, or new promise, as the case may be.

(2) B can bring an action to recover the money due on the harness, but if A has no property upon which B can get execution, B can garnish A's salary.

(3) Promissory notes "outlaw" in Colorado in six years, but the statute of limitations will commence to run from the date that A paid B the $100. If B has died, the executor or administrator of B's estate is the proper party to sue to collect the balance due on the note. If it can be shown that A turned over all of his property to some other member of his family for the purpose of delaying or defrauding his creditors, the executor or administrator of B's estate can have the conveyance set aside and attach the property in question.—Peters & Barker.

Demand Registry Certifiate

We are advised that frequent injustice has been done to western ranchmen who have accepted the word of dealers and shippers of bulls from the Middle West, as to their eligibility for registration. The only safeguard is to require of the seller the registry certificate. It happens that a great many grade bulls are assemhled and shipped west and the sellers find it to their advantage to pass them on as "full-blood" bulls or "eligible to registry." This assurance on the part of the seller naturally encourages a little higher bid from the purchaser, but such practice is a gross injustice. In short, it is a fraud. If the western buyers will always require the evidence in the form of a registry certificate, they will be able to protect themselves and insure a better investment.

In many cases a non-registered or high-grade bull may be a good individual yet lack the strength of pedigree that will enable him to prove a prepotent sire. He will fail to work the improvement that a registered bull of similar or even less desirable individuality will accomplish.

The only way to raise the standard of cattle in the western country or in any country is through the use of registered sires, and the American Shorthorn Breeders' Association desires to encourage, as far as possible, the improvement of the cattle stock on the western ranches by advising the purchasers of Shorthorn bulls to insist on registered animals.

Legal Fence

Please tell me what is a legal fence, in Colorado.—W. S., Boulder Co., Colo.

The following shall be a lawful fence in the state of Colorado: Post and board fences, made of sound posts, not less than five inches in diameter, set substantially in the ground not more than eight feet apart, with three boards of one inch lumber, eight inches wide, and not more than eight inches apart, or four boards one inch thick and six inches wide, and not more than six inches apart, securely fastened with nails or otherwise: a three-pole fence, with sound poles not less than two inches in diameter at the small end, with post as above, one at each end, and one in the center, or near the center, of each panel; a fence of three barbed wires, with posts not more than sixty feet apart, with stays between not more than ten feet apart, or three barbed wires with posts not more than thirty-three feet apart with one stay midway between; or two barbed wires with pole at top, not less than two inches in diameter, wired at each end to posts, the posts not to be over eight feet apart; or four plain wires, with posts not less than five inches in diameter, and not over fifty feet apart, with stays between, not over ten feet apart; Provided, that any division or road fence made of wires shall be deemed unlawful that contains a less number of wires, posts and stays than above described. All other fences made of board, rails, poles, wires, stone or hedge plants, or other material, which shall be as strong and as well calculated to protect enclosures as those above described, shall be considered lawful fences; and said plain wires, as described in this section, shall not be less than number nine, and all wires shall be properly stretched.

All fences shall be not less than four feet and six inches in height.

Alice—Why are you taking up botany?

Kitty—Because my fiance is interested in a plant of some kind and I want to be able to converse intelligently with him about his business.—Brooklyn Citizen.

A poultryman had two geese. To keep them from wandering from home, he tied them with a cord. They liberated themselves by breaking the cord. When liberated, what breed of geese were they?—W. L. B.

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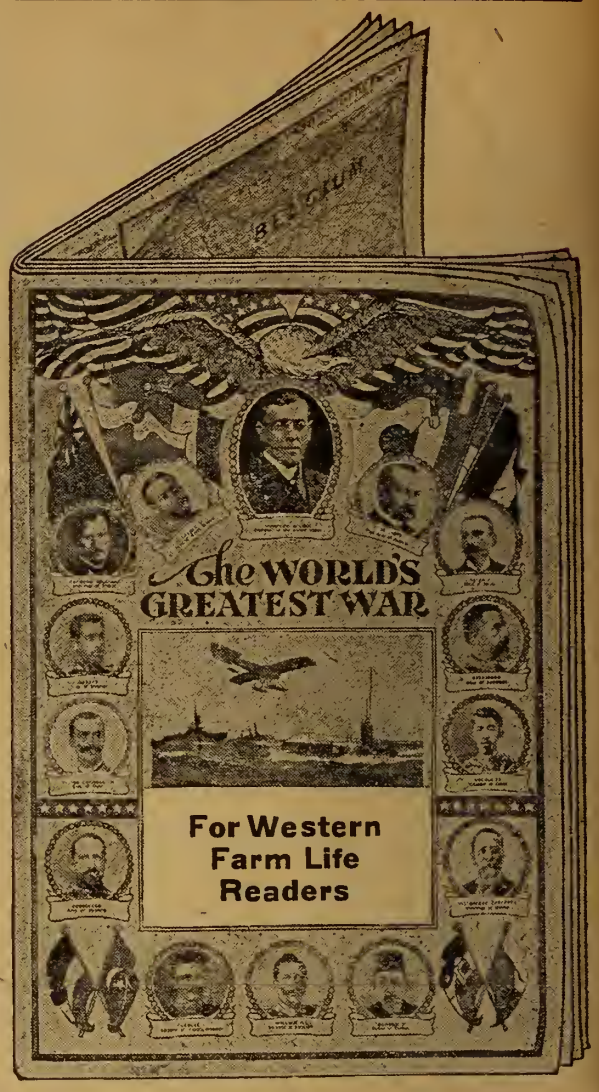

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Feed Cows As Individuals

Cows must be fed as individuals and not as a herd if they are to be fed economically, asserts O. E. Reed, professor of dairy husbandry in the Kansas State Agricultural College. The quantity of milk produced by the cow is an indication of the quantity of feed she must have.

The first use to which the animal puts its feed, whether producing milk or not, is to maintain the functions of the body. The feed in excess of this amount is used for producing milk, storing fat or for growth of the foetus.

That underfeeding is perhaps more common than overfeeding, is the belief of Professor Reed. The effect of underfeeding may not be noticed at once, as the cow will produce milk for a time by converting the surplus flesh of her body into milk. Hence, if a cow declines in weight while she is producing milk, it is an indication that she is not receiving enough food. On the other hand, the overfed cow may put fat on her body or she may get off feed.

The feeds in a ration must be such as to provide a sufficient bulk to satisfy the appetite and feeding capacity of the animal, and to furnish the amount of nutrients needed by the cow. An animal may be fed enough nutrients in the form of grain to perform her work, but she may receive too little bulk to be satisfied.

The roughage should form the foundation of the dairy ration. A cow should have all the roughage she can clean up, and the grain ration should be regulated by the amount of milk produced. A cow should be fed one pound of grain to each three pounds of rich milk produced and one pound of grain to four pounds less rich milk.

The three substances which must be considered in making up the ration of the dairy cow are protein, carbohydrates and fats. These substances are found in all feeds but in varying proportions. Cows must be fed intelligently if the highest and most economical returns are obtained. One of the principal reasons for the low average production of the cow is that she is not properly fed. Economic feeding resolves itself into the study and execution of the lesson which nature teaches. The cow makes her greatest production in the early summer. The intelligent feeder, therefore, will strive to maintain similar conditions as nearly as possible thruout the year.

Farm Cheese-Making

One hundred pounds of whole milk will make from ten to eleven pounds of cheese, which is equivalent to about twenty pounds of beef. According to the United States Department of Agriculture, one pound of cheese is equal in food value to two pounds of beef. A similar comparison might be made with pork, since pork and beef are not widely different in food value, altho pork has a little higher fuel value. Since hogs furnish the chief source of meat consumed on farms, a comparison of pork with cheese will not be amiss. Twenty pounds of pork, at 25 cents a pound, would be worth $5. Now if 100 pounds of milk will produce cheese with about the same value as $5 worth of pork, the latter should be sold and more cheese used in its place.

In addition to other qualities, cheese does not require cooking before being served. It may, however, be grated and served in a variety of ways with cooked foods.

Pound for pound, cheese contains nearly twice as much protein as beef of average composition and more than twice as much fuel or energy value. Considering its high food value, cheese is, therefore, a more economical food than meats of any kind.

The making of cheese under farm conditions is not difficult. It requires very little time and no expensive equipment is necessary. The apparatus used can be largely supplied from the household utensils. Besides these, a dairy thermometer and a few rennet tablets will be required. The rennet tablets can be purchased from any dairy supply house.

Calves Need Whole Milk

We are beginning to question whether after all it pays in the long run to rob the calf of its mother's milk and try to raise the future cow on white-wash and sawdust, or to express it with a little more moderation, to try to raise the calf on separator milk and patent foods.

Certain it is that the calf will keep healthier and grow into a better cow or bull if given whole milk, at least as a part ration. Dairymen have figured it out to their satisfaction that whole milk is too valuable to feed to calves and from the standpoint of immediate returns, those figures don't lie. But if we could in some way estimate the ultimate loss in calves that die from this treatment, the depreciation in value of mature animals that have been stunted in their growth and the price that must be paid for milch cows, it might look different. Is it not a case of "saving at the spigot and losing at the bung?"—Geo. H. Glover, Colorado Agricultural College.

Efficiency of the Dairy Cow

Just what percentage of food value is lost thru the use of the different classes of livestock in converting grain and roughage into animal food for human consumption, we have no reliable data to indicate. Sufficient data are available, however, for making calculations which are valuable for comparison. Washburn of Minnesota quotes Haecker (Productive Dairying, p. 4) for authority that the dairy cow returns in her product 29 per cent of what she consumes, while the steer returns as flesh scarcely 14 per cent. That is, for every hundred units of digestible feed consumed by the cow, 29 will be recovered in the milk and 71 lost in the process of transformation, while for every 100 units fed to the steer but 14 will be returned as edible flesh and 86 will be lost.

Figures from Warren ("Dairy Farming," by Eccles and Warren, p. 8) indicate that the dairy cow is about twice as efficient as the steer and that the pig ranks about half way between the cow and the steer.

Waters of Kansas, assuming that a steer on full feed for 300 days would make a total gain of 675 lbs., states that this amount of total grain would contain 389 lbs. of dry matter of which 348 lbs. would be edible material. He further states that "in the same length of time a dairy cow of quality equal to that of the steer would produce at least 6,000 lbs. of milk containing 840 lbs. of dry matter, all of which would be edible." After discussing the palatability and digestibility of the edible material produced by the steer and the dry matter contained in the milk of the cow, he says, "Just what number of pounds of the annual production of the steer would be actually left as digestible material it is impossible to say, but it is perhaps not unreasonable to say that the amount of digestible matter produced by the cow is about three times as large as that produced by the steer in the same length of time."

Since such cereals as are ordinarily used for feeding animals supply so much more human food when used directly than when converted into either meat or milk, the present food situation makes it imperative that as much as possible of these cereals be used for human consumption. It is evident, however, that whatever grain is fed to livestock will be converted into the largest quantity of human food when fed to good dairy cows.

The economy of the cow is further emphasized when we consider that a large percentage of her ration consists of roughage. It is very important under present conditions that this class of feed be depended upon as largely as possible. The cow is especially efficient in this respect. Whatever concentrates are necessary can be supplied entirely in the form of by-products that cannot be used for human consumption.

The high price of grain and of such crops as take large quantities of fertility from the soil is likely to tempt us to use our land too largely for their production. Grain, when sold from the farm robs the soil of the total amount of fertility that is required to produce it. The case is exactly the reverse with the dairy cow. As a soil builder she has no equal. Instead of taking away fertility she adds annually to the soil about 12 tons of solid and liquid manure valued at about $30.00. Such dairy products as are sold from the farm contain very little fertility. To remove as much fertility from the soil as a ton of wheat or 1.11 tons of corn would require 3.7 tons of milk or 14.9 tons of butter.—D. H. Propps, Dairy Extension, University of Nebraska.

An Indoor Constitutional

Augustus O. Stanley, Kentucky's new governor, who has mounted the water wagon, announced recently that during his four-year term not a drop of intoxicating drink will be allowed in the state house.

"The campaign that I propose to wage against alcohol," said Governor Stanley, "is to be a thoro and honest campaign. There is too much hypocrisy among drinkers. Here is a typical instance:

"I sat one evening on a trolley car beside two women who were returning together from an afternoon's shopping tour.

"'My husband goes out every evening for a little constitutional,' one of the women said. Then she inquired, 'Does yours?'

"'No,' replied the other. 'No, my husband always keeps it in the house.'"

Seconded, But Not Carried

Paul Armstrong often told how a lawyer acquaintance of his who lives in Seattle was retained to defend a colored man accused of absconding with the funds of a colored debating society. The outlook for the defendant was rather black. At the trial the attorney for the defense arose and said:

"Your honor, I move that this indictment be dismissed—"

Before he could proceed further his client was on his feet too, addressing the bench without a trace of embarrassment.

"Your honor," said the defendant, briskly, "I second dat motion."

HOT WEATHER
the season when a
DE LAVAL
SEPARATOR
saves most over any other separator or skimming system

IT'S A GREAT MISTAKE for any dairy farmer without a separator or using an inferior machine to put off the purchase of a New De Laval Cream Separator in the summer months, especially with butter-fat at the present unusually high price.

Great as are the advantages of the New De Laval over all other separators, as well as over any gravity setting system, at every season of the year, they are even greater during the mid-summer season than at any other time.

This is because hot weather conditions occasion greatest butter-fat losses with gravity setting and render it most difficult to maintain quality of product with any gravity system or unsanitary separator, while, moreover, the quantity of milk is usually greatest, and any loss in either quantity or quality of product means more.

Then there is the great saving in time and labor with the simple, easy running, easily cleaned, large capacity New De Laval machines over all other methods or separators, which naturally counts for more at this time of the year.

Hence the great mistake of putting off the purchase of a New De Laval Cream Separator in summer, whether you already have a poor machine or none at all, and every dairy farmer should keep in mind not only that a De Laval will pay for itself in a few months but may, if desired, be bought on such liberal terms as to actually save its own cost while being paid for.

Every claim thus made is subject to easy demonstration, and every De Laval local agent is glad of the opportunity to prove these claims to you, in your own dairy, without cost or obligation on your part.

Why not see the nearest De Laval agent at once? If you do not know him, write to the nearest office for new catalog or any desired information.

Every New De Laval is equipped with a Bell Speed-Indicator.

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30 Days' Free Trial Earns its own cost and more by what it saves in cream. Postal brings Free catalog, folder and "direct-from-factory" offer. Buy from the manufacturer and save money.
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The Farm Home

MRS. H. T. FRENCH

Questions about home problems promptly answered by letter and thru the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

True Hospitality—Busy we must be trying to do our bit, but even in these stressed times when many of us must abandon the thot of the usual vacation joys, let us remember that there is a spirit of hospitality apart from and far exceeding the social functions.

In our unpretentious and impromptu "outings" and "at homes" during the summer vacation expressions of true hospitality may be found in word, look and deed.

Every Christian woman will be at all times civil, affable and considerate of the joys of others. Culture, refinement and beauty of character are not confined to any one "set" or "class." As we think of how to spend our vacation days let us weave into our daily plans a desire thru real co-operation in work and play to uplift and strengthen those whom it may be our privilege to know better, that we may each know much joy when "Some day some heart shall say, your low song comforted or helped or made me better, such or such a time when sorrow's weight pressed hard and cold, or dark discouragement overshadowed me, or some temptation lured me from the good."

"Full shines the sun on the pleasant plain,
Murmurs the breeze o'er the ripened grain;
Crickets are chirping in merry mood,
Over the earth does the warm sky brood,
And the day is at noon."

Have We Forgotten?

The women who read these columns surely have not forgotten that we made some resolutions after reading the article on Home Demonstration Work in the March number of our department.

The many encouraging letters received by the editor have answered the question; but with the change of seasons always comes the call for change of plans. And as during the months of March, April and May, Miss Ward, our national leader, and Miss Haynes and other state leaders in home demonstration work helped us to solve some of the problems along the lines of poultry, gardening, home grounds and home sanitation, so in the months of June, July and August come special problems and need of special effort.

From our colleges and other ranks of experts, trained in home economics, are willing hearts and hands going out over our states, meeting farm women individually and collectively and discussing the great food question—the one absorbing and all-important question of how to feed the people.

Canning: The preserving of fruits and vegetables for winter use and the taking care that there shall be no waste.

Food: How to secure the best and cheapest variety of nutritive food; the proper care of food during the hot weather; how to make and use the iceless refrigerator; protection from flies.

Sanitation: Sewage disposal; treatment of stagnant pools; care of outhouses.

Dairy: The summer care of milk and milk utensils; sterilization; marketing of butter, etc.

Home Laundry Work: The use of machinery; proper treatment of various fabrics.

Household Management: Conserving energy; keeping cool and cheerful.

All of the above and more might be included in the working plan for conserving health and happiness, and we know that our various community groups are studying these problems and are becoming more familiar with better and tried methods; also know where to find the advice and help so much desired by those who are working for the best good of every man, woman and child.

No person can reject his or her duty and retain any sense of honor. Look around you in the place where you live and see how much has been done in the past for what you are enjoying today. Find your place and do your share for home, community, state and country.

Summer Menu Helps

To a Guest

Here's to you—a bumper filled with gladness and good cheer.
And may you be one half as glad as we are that you're here!

—Walter D. Nesbit.

Cherries and Berries

Cherry Sponge: Soak a half box of gelatin in a half cup of cold water. Pit one pint of stemmed cherries, steep the pits in a cupful of hot water for one hour, then strain. Add to the water one cupful of sugar, heat to boiling and boil three minutes. Pour this sirup over the cherries, cover and let stand for ten minutes, then rub all thru a colander. Set the gelatin over hot water until dissolved, add to it the cherry mixture and set away until it begins to thicken. Add the stiffly whipped whites of three eggs, and beat on ice until all is light and very thick. Turn into a mold that has been dipped in cold water and put on ice until firm.

Frozen Cherries: Make a sirup with one quart of water and one pint of sugar. Boil ten minutes. Add one quart of sweet cherries rubbed thru a colander. Taste and if not very sweet, add more sugar; some sweet cherries will require it. When cold turn into a packed freezer and turn slowly and steadily until hard. Repack the freezer and stand in a cold place until ready to serve.

Cherry Cups: Sift together a pint of flour, one large teaspoon of baking powder, one-fourth teaspoon salt, one teaspoon sugar. Add gradually sufficient milk to make a drop batter with two tablespoons of melted butter stirred in last. Butter some large cups or ramekin dishes, drop in each a spoonful of stoned cherries and another spoonful of batter. Steam half an hour and serve with sweet cream or a thin sauce of stewed cherries.

Spiced Cherries: Heat one cupful of vinegar, add enough sugar to make it very sweet. Stir in three cupfuls of stoned cherries, one tablespoonful of cinnamon, one-half tablespoonful of ground ginger, one teaspoonful of ground cloves. Cook, stirring often until it is as thick as jam. Put up in glass jars and serve with meats.

Currant and Raspberry Charlotte: Take the crust from a loaf of stale bread and cut into rather thick slices. Dip each slice into melted butter and line the sides and bottom of a mold. Fill the center with a mixture of currants and raspberries, sprinkle with a cup of sugar, cover with the remaining slices cut in strips and bake in a moderate oven for about three-quarters of an hour.

An Important Question

Dear Readers, are you each week adding to your files of bulletins Home Economic Literature and special food circulars? Have you placed your name on the mailing list of your State Agricultural College? Have you organized the boys and girls of your community into garden, canning, poultry and sewing clubs?

Note: Space will not permit the other recipes asked for at this time; but if desired the recipes for Iced Currant Water, Gooseberry Pie, Rich Pineapple Ice, Raspberry Mousse, Raspberry Dumplings and Raspberry Vinegar will be mailed to inquirers.

Milk as a Food

Economy in the diet does not always depend upon limiting the use of certain foods, but it is sometimes a question of actually increasing the use of foods which furnish nutritive material at relatively low cost. Milk belongs to the latter class, and the housewife would do well to study its food value and decide whether her family is using as much as it should. The average person in this country uses only a little more than a half pint of milk daily, and this quantity can very profitably be increased when safe milk is available.

Many people think of milk only as a beverage, but if they understood that it is in reality a nourishing food, they would increase their daily allowance.

We eat foods for two main reasons: First, to renew body wastes and promote growth by forming new tissues and fluids, and, second, to supply energy for carrying on body functions. Milk contains the body-building materials (protein and mineral substances, such as lime and phosphorus), and also supplies energy.

The following table, compiled by specialists of the Department of Agriculture, shows the quantities of various foods needed to supply as much protein or energy as one quart of milk:

PROTEIN

1 quart of milk is equal to—
7 ounces of sirloin steak.
6 ounces of round steak.
4.3 eggs.
8.6 ounces of fowl.

ENERGY

1 quart of milk is equal to—
11 ounces of sirloin steak.
12 ounces of round steak.
8½ eggs.
10.7 ounces of fowl.

Another method of comparison is shown by the table below, in which the relative value of certain foods as economical sources of protein is given:

Milk at—
7 cents a quart.
8 " " "
9 " " "
10 " " "
12 " " "
15 " " "

Is as cheap as sirloin steak at—
16.3 cents a pound.
18.6 " " "
21.0 " " "
23.3 " " "
27.9 " " "
34.9 " " "

Or eggs at—
17.6 cents a dozen.
20.1 " " "
22.6 " " "
25.1 " " "
30.2 " " "
37.7 " " "

According to this table, if milk is selling at 10 cents a quart, sirloin steak must sell as low as 23.3 cents a pound, and eggs at 25.1 cents a dozen to supply protein at equal cost.

TO SUPPLY ENERGY AT EQUAL COST

When milk is—
7 cents a quart.
8 " " "
9 " " "
10 " " "
12 " " "
15 " " "

Sirloin steak must not be more than—
9.9 cents a pound.
11.3 " " "
12.8 " " "
14.2 " " "
17.0 " " "
21.3 " " "

And eggs not more than—
9.3 cents a dozen.
10.6 " " "
11.9 " " "
13.2 " " "
15.9 " " "
19.8 " " "

It can be seen, therefore, that milk even at 15 cents a quart is a cheap source of energy as compared with sirloin steak and eggs.

In comparing foods it is necessary to consider

(Continued on page 13)

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Perfect combustion *inside* the Long Blue Chimney turns all the oil into heat and keeps all the heat at work. No soot, no odors, no broiling kitchens.

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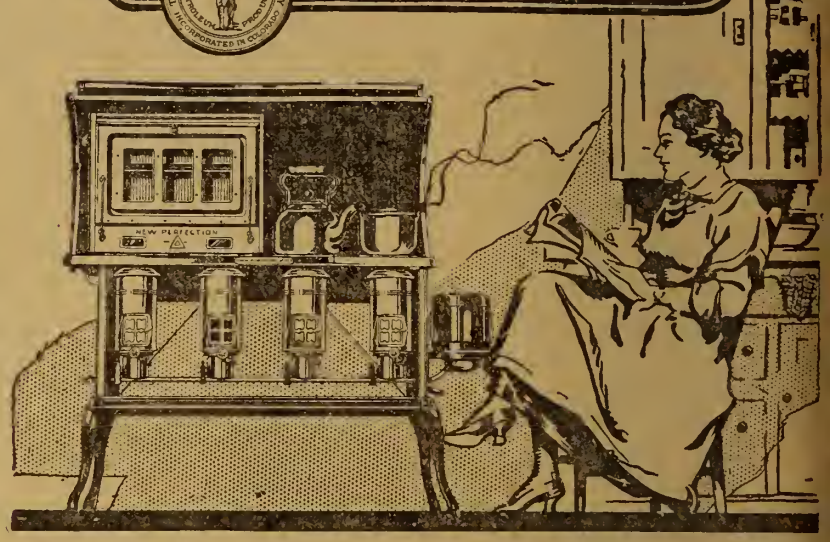


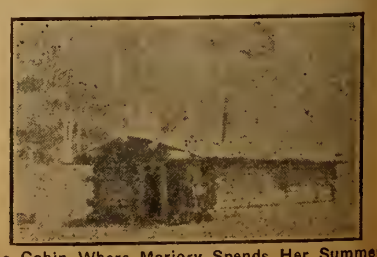
Marjory May Fulton on Irish

I am a little Colorado girl and want to accept your invitation by sending you my picture taken on my papa's favorite cow-pony, "Irish." The picture was taken while we — mamma, papa and I — were up at the summer camp last summer. The camp is on the forest reserve, almost 11,000 feet elevation, and the scenery is wonderful; tall pines, quaking aspens and flowers of every hue grow there. Springs of gushing water abound and thousands of our state flower, the columbine, grow near them. I wish all the city children could have a summer of joy at the camp. Papa is foreman for Mr. W. B. Walbridge, owner of the T I brand, and we live on the ranch in the winter. The ranch is on White river and is a big one — 1,200 acres — and lots of cattle and horses are fed thru the winter and then turned out on government range in summer. The pony, "Irish," is a smart cow-pony, and seems to know when I am on his back, as he goes so carefully then. I call him mine, altho, as you see, he is branded T I.

Mamma says I can send you a picture of the cow camp too and one of the cattle taken on the reserve.

I am not quite three years old, but I know all the cow-ponies by name and there are fourteen of them.

Your little friend,
MARJORIE MAY FULTON,
Meeker, Colo.



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Profitable Farm Poultry

W. E. VAPLON

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries Poultry Department, Western Farm Life, Denver, Colorado.

War-time poultry suggestions from Purdue University:

Raise every chick hatched. Next winter's egg and meat supply depends on the care given the growing chick this summer.

Keep every early hatched pullet for egg production next fall and winter, when eggs will be high. Late hatching is permissible this year if the late hatched chicks are used to increase the country's meat supply. Late hatched pullets will not make early winter layers unless given exceptionally good care.

Keep all hens until about September 1. It does not pay to sell laying hens in the spring or early summer, for their eggs are of more value than the few extra cents per pound obtained at this time.

Do not sell early hatched cockerels as broilers under two to three pounds in weight.

Caponize late hatched cockerels to put on the market next winter, when meat will be scarce.

Sell all old roosters, so that every egg produced this summer will be an infertile egg. Doing this one thing will save thousands of dozens of eggs, usually spoiled by hot weather because they are fertile.

Take good care of the summer eggs. See that they are gathered daily from clean nests, and kept in a cool, sweet cellar until sold. Sell at least twice a week in hot weather, and insist that they are bought on a quality basis. Know that every egg you sell is a good egg.

After harvest get the poultry buildings in shape for winter use. Many farm poultry houses need remodeling, and a few dollars spent in doing this will be returned in extra eggs next fall and winter. For best results pullets will have to be placed in the laying house early in the fall and not disturbed thereafter, so do not put off repairing their house.

Turkeys Need Range

My young turkeys5 and 6 weeks old, have developed a swelling of the knee joint and are unable to stand, but sit crouched on the ground, unable to rise. Have been feeding three times a day, giving curds and green onion tops, mixed yith a little baby chick feed. Have been closely confined on account of the damp weather. Can you advise me wherein the trouble lies and what can be done to remedy it?—W. E. T., Jefferson Co., Colo.

I am unable to tell you the trouble with your young turks, but have a guess that the close confinement is the cause. Turkeys are naturally foragers, and are much more like wild birds than our domestic poultry, and they do not stand confinement very well. If the trouble is serious in your flock, that is if many are affected and do not quickly recover, please write to Dr. Kingman, Veterinary Department of the Colorado Agricultural College, Fort Collins, Colo., who will tell you how and when to ship a case for examination. Only a thoro examination will determine the cause. We should always recommend giving young turks free range, no matter what the weather conditions, so long as the mother is cooped.

Sore Toes in Chicks

Answer to W. E., Lindon, Colo.—During the past few years thousands of baby chicks have been lost in the eastern sections by disease causing sores, starting on the toes and then spreading to the face of the chicks. We have never heard of a case occurring where chicks run on ground that has been cultivated, but every case brought to our attention has been found in districts where chicks have the run of the prairie sod. We have had chicks sent to the college for examination, but have not been able to determine what it is that causes the conditions, but believe it must be a case of poisoning, especially as there is more trouble after a rainy season or when the grass is wet. We are inclined to believe that in some way chicks contract this disease from some poisonous plant which is found in prairie sod, but is destroyed by plowing. If you could keep a brood of chicks on plowed ground, never permitting them to range on the prairie and keep others out on prairie sod, you might learn if some prairie plant is responsible for the disease.

Ducklings Thrive in Hot Weather

There is gardening, canning and drying to be done, in line with the policy to conserve the nation's food supply, all of which will be a great help, but what about the meat question? Prices of meats are soaring. Fewer early chickens were hatched this year than usual, because eggs were high and feed scarce. Late chickens are usually stunted by hot weather, but have the farm women tried raising summer ducks? Strange as it may seem, ducklings thrive best in hot weather, and it is during July and August that I hatch my flocks of Buff Orpington ducks. Ducklings are early and late foragers. It is no uncommon sight to behold biddy groping blindly around in the dark, and trying to follow her busy foragers. When the sun shines hot and water is available, they enjoy best of all to dive into the cool depths after crayfish, frogs and water insects.

My Buff Orpingtons are all-year layers and I always have good success with my hatches.

I have heard women complain that their ducklings ate too much. Upon being questioned they admit that they feed them at least half a dozen times a day and the ducklings just hang around the house waiting for more feed. Such management indeed would be profitless, for young ducks, like young people, can be trained to be lazy or industrious They are smart creatures and soon learn when to expect their meals. I always feed them early in the morning and late at night, when the chickens are on the roosts.

During the day they are off foraging in weeds and grass, or in the water. Quite often they find so much that I feed them only enough to let them know they are not forgotten. They certainly convert waste into meat. I feed them all the tough lettuce leaves from the garden, and this is one thing that cannot be dried or canned. Ducklings like nothing better.

Ducklings grow about three times as fast as chicks. In the fall I find that they have grown to be ducks weighing from six to eight pounds each. I get good prices for fancy stock, feathers and the eggs. And when I watch the hungry men eagerly eat a portion of deliciously roasted duck I know I am doing my part in providing food.—Mrs. Fred Sieglinger, R. F. D. 1, Stillwater, Okla.

Poultry Bulletins Free

Capons and Caponizing — Farmers' Bulletin 452.

Hints to Poultry Raisers — Farmers' Bulletin 528.

Important Poultry Diseases — Farmers' Bulletin 530.

Boys' and Girls' Poultry Clubs—Farmers' Bulletin 562.

Poultry House Construction — Farmers' Bulletin 574.

Natural and Artificial Incubation—Farmers' Bulletin 585.

Natural and Artificial Brooding—Farmers' Bulletin 624.

Simple Trap Nest for Poultry—Farmers' Bulletin 682.

Squab Raising — Farmers' Bulletin 684.

Duck Raising—Farmers' Bulletin 697.

Goose Raising — Farmers' Bulletin 767.

Turkey Raising — Farmers' Bulletin 791.

Mites and Lice on Poultry—Farmers' Bulletin 801.

Reported available for free distribution. Send all requests to Editor and Chief, Division of Publications, U. S. Department of Agriculture, Washington, D. C.

Electricity on the Farm

Up until a year ago, I used to spend not less than an hour every day cleaning and filling the half dozen coal oil lamps that we used all over the house. The lanterns that the men used in the barn had to have some attention too, but I hated the work so much that they didn't get it every day. About a year ago, however, my husband got a little electric light and power plant and it has certainly made a great change. Instead of the old-fashioned, smoky, dirty, coal oil lamps, we have electric lights all over the house and we have it in fixtures that are both handsome and serviceable. A chandelier with four lamps in it or a good side light certainly makes a room much better lighted and makes a much better light for reading than was possible with the old coal oil lamps.

The picture here shows our front hall and stairway. You will notice that there is a switch on the wall just at the foot of the stairway. This switch turns on a light in the upstairs hall which makes it much more convenient at night. Every time I turn on that switch and go up stairs, I think of the old days when we used to have to carry a coal oil lamp up with us, and of the danger that there always was of falling or dropping the lamp and of starting a fire. In fact, I believe that electric light is as valuable on account of its safety as it is because of its convenience. This is particularly true of the little, isolated plants which they make for farm use,

Our Stairway Corner

because these plants use 32-volt instead of 110-volt as are used in the city. The latter voltage is high enough to start a fire by a short circuit in some cases, but 32-volt is too low to be dangerous from the fire standpoint, and it is also too low to give anyone an electric shock. At the same time, the lights which you use on these 32-volt plants are just as bright as those used in the city.

When we put in our electric plant, we decided that we might just as well get the full benefit of it, so we put lights wherever we thought we would need them. We have forty-two altogether in the house and barn, and I have lights not only in every room and hallway in the house, but also in the closets, in the attic and down in the basement. You would be surprised to know how convenient a light is in a closet. It's one of those places where you never need a light long, but where you want a good one in the right position when you do need it.

There is another side to this subject of electricity for the farm which we haven't found out much about yet, but which I am expecting to learn all about in a year or so. That's the question of electric power. Our little plant can furnish enough current not only to light all the lights in our house and barn, but also to run electric motors. We can have electric fans, a vacuum sweeper, a washing machine, an electric pumping system, an electric flat iron, toaster, and all sorts of convenient electric appliances on the same current that lights our lamps, and my husband can run lots of light farm machinery in the same way, such as churns, cream separators, grindstones, etc.

When one stops to consider all the conveniences of electric light and power, the price of the best plant and the cost of wiring with plenty of good fixtures doesn't seem a very high price to pay. I know if we had it to do over again, we would spend the necessary money without any hesitation.—Mrs. C. A. H.

Milk as a Food

(Continued from page 12)

both the protein and the energy furnished. Neither one alone can properly be used as a basis of comparison, nor is there any correct way to reckon the value of a food by considering the total amount of nutritive elements.

It is very difficult to compare foods on the basis of the mineral matter they contain, but all physiologists agree that milk is extremely valuable from this standpoint. Indeed, it is the food prepared by nature especially for the growth and development of the young. A quart of milk a day is a good allowance for a young, growing child.

In addition to being an economical food, milk is usually easily digested and requires no cooking or other preparation for the table. Specialists of the department have also found that it is digested better when taken with other foods.

There are innumerable ways to use milk in cookery, such as in puddings, blanemange, soups, chowder, "junket," etc., and in all these ways it is both appetizing and nourishing.—Dairy Division, U. S. Department of Agriculture.

Canning Bulletins Free

"Home Canning by the One Period Cold Pack Method" is the title of a bulletin just issued by the Department of Agriculture for the benefit of housewives who wish to aid in conservation of food products. Copies are furnished free on application to the Department of Agriculture at Washington, D. C. Ask for Farmer's Bulletin 839 on Home Canning.

Colorado people may have copies in quicker time by sending their application to W. E. Vaplon, State Leader Boys' and Girls' Clubs, Fort Collins. The college has a large supply of these bulletins, and also a bulletin on the drying and evaporation of fruits and vegetables which will be distributed on the "first come, first served" plan.

Recipes for Omelets

Omelet No. 1: Two eggs, one-eighth teaspoon salt, 1 teaspoon butter, cayenne or white peper, 2 tablespoons milk. Beat the yolks of the eggs until white and creamy, add the seasoning and milk; beat the whites until stiff, but not dry; cut them into the yolks. Heat an omelet pan and rub it all over with butter, turn in the omelet, spread it evenly on the pan. When the omelet is hot put it into a hot oven for a few minutes to dry slightly on top, fold and serve immediately.

Omelet No. 2: One teaspoon butter, 1 teaspoon flour, quarter teaspoon salt, pepper, one-half cup milk, 1 teaspoon butter. Make a white sauce of the butter, flour, salt, pepper and milk; separate the whites and yolks of the eggs and beat them until light. When white sauce is cool add the yolks and cut in the whites. Cook in the same way as Omelet No. 1.

Creamy Egg: Four eggs, one-half cup milk, one-half teaspoon salt, one-eighth teaspoon pepper. Beat eggs slightly, enough to blend the whites and yolks; add milk and seasoning. Put in a double boiler and cook until the whole is of a creamy consistency, stirring constantly. Serve on toast.

HOME-MADE COOKIES

One cup sugar, ½ cup lard, ¾ cup sweet milk, 1 heaping teaspoonful baking powder, flour to make a dough that will roll out thin.

PATTERN DEPARTMENT

All Patterns 10c each. Address WESTERN FARM LIFE, Pattern Department, 14th and Arapahoe, Denver, Colo.

2111—A Pretty Gown. Cut in sizes 16, 18 and 20 years. Requires 5⅝ yards material for an 18-year size. This dress will be nice for dotted mull, novelty silk, crepe, challie, voile, batiste and messaline. It is also suitable for gingham, chambray, lawn, bordered goods and flouncing. The fronts meet over a vest that could be made of contrasting material. The sleeve is shirred at the wrist where it forms a soft ruffle.

2104—A Charming Lounging Robe. Cut in sizes Small, Medium, Large and Extra Large. Requires 6¼ yards 44-inch material for medium size. Figured crepe, dotted challie, percale, silk, satin, cashmere, albatross, batiste, dimity and dotted Swiss could be used for this style.

2129—A Pretty Dress for the Little Miss. Cut in sizes 4, 6, 8 and 10 years. Requires 1¾ yards for the bolero and 4¼ yards for the dress of 27-inch material, for size 8. This is a very pleasing model and one that will lend itself readily to various materials or combinations of materials. The bolero may be omitted or may be cut short under the arms, as in the back view. Batiste, embroideries, voile, challie, lawn and crepe are nice for this style.

2108—Comfortable Play Suit for Small Boys. Cut in sizes 2, 3, 4 and 5 years. Requires 2¾ yards 36-inch material for 3-year size. Gingham, drill, serge, linen, chambray, poplin, repp and galatea are nice for this style. The closing is at the side.

Livestock

Money in Buttermilk Hogs

A car of hogs every two weeks is the recent record of W. S. Pershing, a Limon, Colo., farmer who is fattening hogs on corn and buttermilk and shipping them to Denver, where he gets from $15 to $16 a hundred on the hoof. Mr. Pershing gets his buttermilk from the Equity Creamery at Limon at a cost of 2 cents a gallon, using as high as 2,500 gallons a day. He was finishing hogs up to medium weights, which are much in demand, and cars were bringing him about $2,500 each, with loads running all the way from 60 to 80 hogs. He has about 300 head of stock hogs and was sold down pretty well in June. The high price has drained the dry land country of hogs and there is a great demand now for young stock, as prospects for corn are good. Mr. Pershing had been buying up thru the country to fill in his carlots. His own corn had long since run out, but he found plenty in the country to buy. His stock hogs were on dry land alfalfa pasture and doing splendidly. Last fall he made a good profit by hogging off fifty acres of corn. The dry land corn does not make a high growth and the ears are close to the ground, so there is little waste, no trouble for the hogs, and big profits for the farmer who adopts this method of making pork.

W. S. Pershing Loading Buttermilk Hogs for the Denver Market, at Limon

Monday Morning Disease

I have a 5-year-old horse that is not doing well. He was well wintered on alfalfa hay, third cutting, is in good flesh, did practically no work for about three months. Two months ago I began working him and his mate on a ditch and dam, hauling, scraping, driving piling, etc. When I began working him I commenced feeding grain. At first I fed oats, but later, on account of prices, I changed to corn chop, something less than two quarts, three times a day. He gained in flesh and had good life until just two weeks ago, after a very light day's work, he began stumbling when I led him from his stall and appeared to have no use of his forelegs. I immediately consulted a veterinarian and he advised me that the horse had axotouria or "Monday Morning" sickness, and that it was a very common thing, and all he needed was a few days' rest and he would be alright. He did appear to be better next day and I rested him for just a week and then decided to hitch him to the buggy and I walked him slowly for about ten blocks. I saw he wasn't acting natural and by the time I could get the harness off he was stumbling round on all four toes and the sweat began running from him in streams. I hastened to call another veterinarian. He pronounced it axotouria, gave him a dose of something, advised me to cut off all grain and down to two light feeds of alfalfa a day. I have done this and waited another week. His muscles are considerably puffed just between and back of his forelegs. He has lost some flesh, his appetite is good but he is still far from well. He is a valuable horse and I cannot well afford to lose him, nor even the use of him. Can you suggest a course of treatment? I might mention that the stumbling lasted only about 30 minutes, when his muscles seemed to relax and he walked better.—I. J. C., Lamar, Colo.

You have described a typical case of what is commonly known as axotouria (Paralytic Hemoglobinemia). It is sometimes called "Monday Morning Disease" for the reason that it almost invariably follows one or more days' rest after the horse has been working regularly on full feed of concentrates. The horse goes out with a superabundance of animal spirits, but soon begins to lag and sweat profusely. There is trembling, stumbling, hardening of the muscles over the hips or shoulders, coffee-colored urine, rapid breathing, yellowness of the eyes and symptoms of paralysis.

A horse that has been down two days seldom recovers. The central thought in treating these cases is to stimulate the excretions and thus by every possible means eliminate the azotized or waste products. There are several theories which represent a wide divergence of opinions as to the true cause and nature of the disease. All theories are based upon a surplus of food energy which accumulates in idleness. Among other pathological phenomena the red blood cells are broken up and the coloring matter (hemoglobin) is liberated. This being eliminated by the kidneys gives the urine its coffee-colored appearance. Horses that are fed sugar beet tops or certain other very rich feeds occasionally develop the disease in the fields, without the period of close confinement, but this is exceptional. The disease can be easily prevented and every man who works with horses should be familiar with the disease and the conditions under which it almost invariably appears. There are two things that should be especially kept in mind in this connection. The first one is that hard-working horses, on full feed, must not be laid off even for one day, without restricting the feed and providing for some exercise, either in the harness or in a corral. The second thing is that whenever a horse begins to sweat profusely and stiffen, soon after taking him from the barn, he must be stopped and unharnessed then and there. Do not even try to work him along slowly to the barn, for this mistake will likely cost you the price of the horse. Throw blankets on him and send for your veterinarian. The disease is far more fatal in the eastern states than it is in Colorado, but is looked upon as a very dangerous disease in any climate. When a horse recovers from a severe attack he is quite sure to suffer atrophy of the hip or shoulder muscles (sweeney) and be practically useless for a year. In this particular case your horse will be more subject to the disease in the future and you will need to observe the conditions of feeding very closely. A few weeks on grass will be the best safeguard.—Geo. H. Glover, Colorado Agricultural College.

Corn and Gluten for Hogs

With corn at $1.50 per bushel and gluten feed at $53 per ton, which ought a person to feed to his pigs and to his old sows which are being fattened off this fall?

At these prices, we would not depend on either feed exclusively. In fact, we would be inclined to allow the pigs to be the judge, allowing them to eat all the corn they want out of one self-feeder and all the gluten they want out of another. Of course, if the idea is to hold back the pigs and fatten them on new corn this fall, it will be necessary to use a different plan, and in such case we would aim to feed corn and gluten half and half. If the pigs are on pasture, we believe that they can balance their ration splendidly on corn and gluten, but if they are in the dry lot, we would be inclined to feed them, in addition, some oil meal or tankage. Oil meal at less than $55 a ton is decidedly worth while considering, with corn and gluten as high as they are at present. We would aim to feed the average hog, on full feed, from one-half pound to a pound of oil meal daily.—Wallace's Farmer.

Frontier Days at Cheyenne

The world's biggest wild west show and the greatest military spectacle ever staged in the west will take place at Cheyenne for the benefit of the American Red Cross society the week of July 23-28, when the old capital of the "cow country" holds its Golden Jubilee and twenty-first Frontier Days celebration. One-half of the proceeds of Frontier Days always has gone to the city of Cheyenne for public purposes and one-half to the fund for future Frontier Days. The Cheyenne city commission, inspired by patriotic appreciation of the noble work which the Red Cross will do for American soldiers wounded on European battlefields, has decided that every penny of the city's share of the 1917 proceeds from Frontier Days shall be donated to the American Red Cross society.

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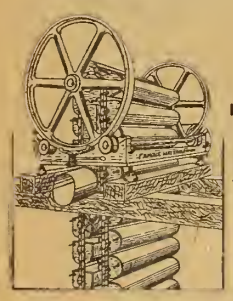

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With summer comos a great doal of work for the farmor, so a number of tho Granges close during tho summer months. Thoy go back in the fall with renewed energy. The Stato Business Agent is as busy as tho farmer. Call on him when in Denver, 416 Charlos building.

Orchard Grange No. 285, altho just a new Grango, is a thriving one. A year ago May 10th we organized witn 33 members. Our roll now numbers 75 and more coming in each meeting. We celobrated our anniversary with a feast of ice cream and cake. The Grange has been instrumental in organizing a Farm Loan association here. The officers are all Grangers. Last fall, thru tho efforts of the Grange, apples were placed within reach of everyone. We are having a program contest at present, with our lecturer and one of the other members acting as captains, the judges being chosen from among the members. Later on we expect to give a play worked up by the two sides combined. At present we are working for the Red Cross Association. We have lost thru enlistment one of our boys.

The Animas Valley Grange No. 194 dedicated their hall the evening of June 9th. We used the ceremony for Dedication of Rural Homes. It was an open meeting and a large crowd attended, a number from neighboring Granges being present. After the dedication all enjoyed a box supper. The boxes were auctioned off and $84.35 was cleared. With part of it we finished paying for our piano. After supper speeches and music were enjoyed by all. Since last fall we have taken in 32 members and have 11 applications.

Rimcone Valley Grange No. 307 meets on the second and fourth Saturdays of the month. We are beginning a play and having an attendance campaign. The losing side is to furnish a feast. A program is to be given in which every member must take part.

The Maple Grove Drill Team went to Watenburg last month to confer the third and fourth degrees for the Valley View Grange. As they meet in a large town hall, they also drilled.

Under the auspices of the Darden Pomona Grange, the Grange picnic and field day sports will be held at Golden City Park, July 14th. A big day is planned. All kinds of races will be indulged in. There will be a baseball game and in the afternoon prominent speakers will be there.

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HOLSTEIN CALVES—TWELVE HEIFERS AND two bulls, 15-16th pure, four to six weeks old, $20 each, crated for shipment anywhere. Fernwood Farm, Wauwatosa, Wis.

REGISTERED HEREFORD BULLS FOR SALE; one bull, Bonnie Lad 20th 355369, twenty months old. Good individual. Three yearling bulls. Write for full particulars and prices. Fontaine & Weedin Ranch, Calatea, Colo.

CATTLE AND LANDS FOR SALE—200 HEAD purebred Hereford cows (and calves put in) and improved native hay and alfalfa lands—one-half cash, balance on long time, low interest. Address Owner, Box 35, Hillside, Fremont County, Colo.

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REGISTERED, BIG TYPE DUROC JERSEY hogs for sale. Edgemoor Farm, Littleton, Colo. Caldwell Martin, Owner.

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Two Thousand Attend the Silo Meeting at Limon

(Continued from page 3)

water. The addition of water and thoro tramping during the filling help to prevent spoiling. During the filling the sides should be kept slightly higher than the level of the center, and the silage should be tramped especially well near the walls, in order that air spaces may not be left when the silage settles, thus allowing the growth of mold. If the silo is airtight and the filling is conducted with care, there should be little if any moldy silage, except at the top. The loss at the top may be lessened by covering with stover or waste material, soaking down, and sowing to oats—or better still, by starting to feed the silage at once. In the latter case, the silo may be refilled after the silage has settled, without having to throw out any spoiled silage.

The refilling after settling may be done with fodder which has dried out in the shock. Of course this must be well soaked with water. The entire silo may be refilled with dry fodder, after the first lot of silage is fed, provided it is well packed and about an equal weight of water is added. The water should be added slowly, to give it an opportunity to soak into the cut forage before running off. The silage resulting is not as palatable or as aromatic as normal corn silage, but it is much more succulent and is eaten more readily by cattle than is the dry fodder.—A. R. Lamb, Chemistry Section, Iowa State College.

Cutting Out Whole Orchards

ALFRED M. WILSON

One grower of whom I have heard has, in my judgment, gone daft on the matter of cutting out trees. As indicated in a former article, certain kinds of trees should be cut out if an orchard is to be brought up to its maximum efficiency. I also went a step farther and said that even a whole orchard should be cut out if it should be seen that the ground on which it was set was not adapted to the raising of fruit trees. But to cut out a whole orchard for any other reason is an entirely different and more serious proposition. Yet that is just what the particular grower to whom I have just referred is planning to do. He has already cut out certain blocks of trees, not because they were trees that should have been eliminated, but in order that he might have more land free for general farming purposes. But now he is planning to go farther and to cut out the trees in a ten-acre orchard. These trees are for the most part Winesaps, which, as every well-informed grower knows, is one of the best and most dependable selling varieties. It seems to me that a grower who would cut down an orchard in which Winesaps are the predominant variety is in sad need of some kind of guardian.

To cut down whole orchards indiscriminately proceeds on the assumption, first, that the fruit industry is dead, and, second, that general farm land is more valuable than fruit land. I deny both propositions. At present there are some discouraging features connected with the fruit industry, but the man who thinks that the fruit industry is dead has mistaken the recession of the wave for the drying up of the ocean. We may never again, and perhaps it would be better for us if we should not, reach the high water mark of the boom times; but in the near future, possibly even this present year, we shall get prices for our fruit which shall justify our faith in the industry. Nor can I, nor can anyone who knows what can be made out of fruit, grant the second assumption. Five hundred dollars per acre is, under normal conditions, below what fruit land is worth. Even so, it is worth five times as much as farm land. As a consequence the man who cuts down a commercial orchard reduces the value of his land by four-fifths.

Again, here in the Grand Valley, the taxes on fruit land are much heavier than they are on farm land. In order also to get his taxes reduced, the grower referred to above is cutting down his orchards, yet he is inconsistent. He destroys his trees in order to profit by the reduction in the amount of his taxes, and yet if you ask him the price of his denuded land he will give you the price at which he was accustomed to hold it as fruit land. With such men it is impossible to reason. Better, I think, to let them alone to run their mad career. By cutting down their orchards, they lessen the land value of the same; but by the same process, yet without intending to do so, they increase the value of the orchards of those of us who have faith in this fruit business and intend to stand by it.

Letters From Farmers

During the agitation three months ago for greater acreage of food crops a great many letters were received from subscribers who gave their views, adverse and otherwise, on the subject. Some complained of inability to get money thru the federal farm loan system. The cause for this complaint no longer exists, because the system is now in good working order and appraisements are being made as rapidly as possible. Others declared that their local bankers were not liberal with loans; still others that the middlemen were taking too much profit. Since that time the banks of Colorado and adjoining states have loaned many thousands of dollars to farmers to buy feed and seed. A few letters follow:

As a dry land farmer and one of your subscribers I wish you would please tell me how I am to speed up and raise more and bigger crops?

Last winter I made application for a loan from the Federal Land Board. No money in sight. Can a man wait until the government unreels four miles of red tape to get money whereby we can buy seed and feed? I have the land, horses and tools to put out a good big crop, but have not the seed and feed to do it with. Now, I want pinto beans enough to plant forty acres and would like enough seed potatoes to plant one or two acres. I offered to give one-fourth of the crop, both of the beans and potatoes, if someone would furnish me the seed. You say the banks will lend money. Oh, yes, if you have someone to go good for you. Do you suppose I will ask someone to go my note? Not me. The government can loan money to Europe, but the American farmer can wait until they can get around to it before he can get help. You have hundreds of readers of your paper that are just as hard up as I am. We farmers should do our best to feed the world, but we need help and we need it now. I have the land all plowed and ready for the seed. Have not the seed nor the money to buy. Don't tell me to go to the Chamber of Commerce of ———— for it, because it would be about as hard to find as peace in Europe. If you have any plan by which we can get a little help, would thank you very much for the same.—Subscriber, Logan Co., Colo.

Isn't this a good time for farmers, Granges, farm papers and everybody interested to make a big push all along the line to influence Congress to knock out that grain gambling at Chicago and also the stock exchange in N. Y? There is no need of either of them in legitimate business, no more than there is of a Monte Carlo or a faro bank. The grain gamblers of Chicago never handle a bushel of wheat—it's just wind, but they are the fellows that have put up the price of grain and everything else. When you ship a car of wheat to Chicago your commission man don't go into the wheat pit among the gamblers to sell it, but goes around quietly among the buyers and hunts his customers if he hasn't already got a place for it. I have shipped nearly all kinds of farm products and have been up on 'change with my commission man, witnessed the whole thing and I know.

When they have abolished these gambling dens then let them put a maximum and minimum price on wheat, corn, all kinds of grain, beef, pork, mutton, sugar and all the great commodities. $1.25 is enough for wheat, 80c for corn, no matter if the country were cleaned out to the last bushel. This speculating on the necessities of life is highway robbery.

Sugar should never go above six cents. The sugar factories contracted with farmers for beets last year on a basis of six cents. They made a fifty per cent profit at that, but they are now selling their sugar at ten cents. They have contracted for beets this year, figuring on a basis of six to seven cents and beets must test 16 per cent sugar content, which means 320 lbs. to the ton of beets. The farmer gets $7 and the manufacturer, if 250 lbs. of that is sugar, $25.00, at present prices. The syrup and pulp probably will pay the expense of manufacturing.

As for the stock exchange any one has only got to look up the record of their manipulation of the stock of the Union Pacific a short time ago. They sent it above par, then down to 60, then up above par again and then, shortly after, the railroad company cut a melon of several million dollars. The fact was the stock was actually worth just as much one time as another.

I could write enough to fill your paper, but if you can't see the point with what I have written there is no use of any further waste of words.—George T. Gibbs, Canon City, Colo.

I am taking the liberty of trying to tell you something of the conditions prevailing in this part of Colorado in regard to "larger acreage of crops," as I see it. As you may know this is in the southeastern part, where it is just being settled by the homesteader and you probably also know that there was scarcely any crops raised in this district last year by the dry land farmer, and the homesteaders for the most part are scarcely able financially to stay on the place much less put in a larger crop as advised, unless they can be helped in some way.

I am sure there are hundreds of acres that must lay idle from the fact that the farmer is not able to buy feed and seed at the unreasonable high cost of grain to plant the coming crop. But the farmer would be glad, or at least the majority would, to plant a large crop of the grain sorghums, beans and other crops adapted to this district and help the nation as well as themselves. We have plenty of moisture and good prospect for a crop. What can be done about it? Hope you will be interested enough to investigate.—Mrs. G. H. Roberts, Maxey, Baca Co., Colo.

As I am a subscriber to your valuable paper, I thot I would write you in regard to the way things are in this part of the county. I am out assessing the dry land district and I find two-thirds of the farmers trying to plow without feed of any kind and a great many have no seed. Some have no money to buy seed nor feed and something ought to be done to get them some feed and seed that will grow and will do the most good. A good many have what stock they have mortgaged and, therefore, are unable to do anything.

It looks to me that in a time like this the state should let out some of the school land money, loan it on the improvements if they have no stock clear. When they go to the bank to borrow they have to give good security and pay 10 to 12 per cent for a six months' loan which is long enough for some. One farmer told me a day or two ago he didn't know what he was going to do if the storekeepers go together and ask cash for flour and other things, let alone feed. It looks to me that we have a good many business men and bankers that are very patriotic when things are coming their way. In a trying time like this people shouldn't be trying to corner everything and boost prices up, but everyone should try and grow something, use every vacant lot instead of growing weeds.—J. J. Rafferty, Sugar City, Colo.

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Western Farm Life

Vol. XIX | Denver, Colorado, August 1, 1917 | Semi-Monthly

Among the Holsteins at Johnstown

See Article Page 3

Brock Bellner Press Co.

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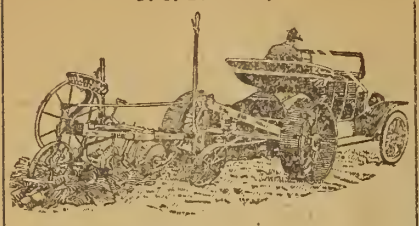
F. O. B. Factory



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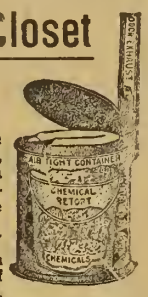

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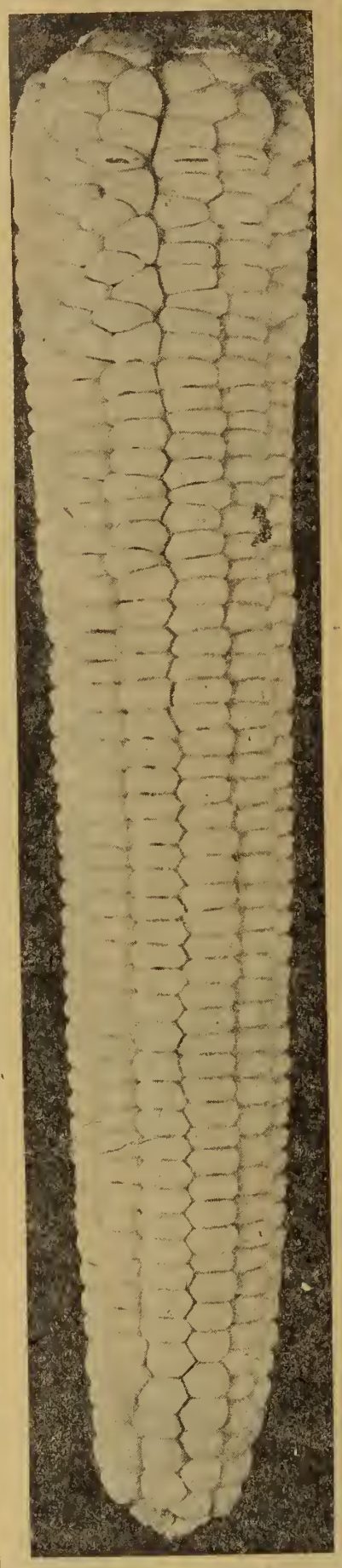
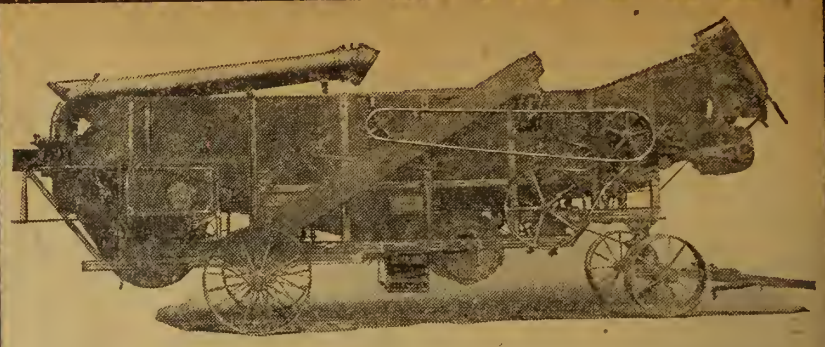
Parsons' High Altitude Corn

This is an ear of Parsons' High Altitude seed corn, grown by Frank Kohler of Calhan, Colo., in 1916 at 6,500 feet. The photograph from which this cut was made is just three-fourths of an inch shorter than



the original ear, the reduction having been necessary in order to get the photo on an 8 x 10 plate. On page 4 of this issue Mr. E. R. Parsons, editor of the dry farming department of Western Farm Life, gives us in detail the story of how he originated this variety of corn, the improvement of which is now being continued by Mr. Kohler. It is an absorbing story of a worth while effort that should inspire other farmers to take up the development of dry farming crops for seed. Mr. Parsons makes no extravagant claims for his corn. In fact, he is too modest in setting forth its good points. Comparing this typical ear with an ear of dry farming corn of the ordinary nondescript varieties grown in Eastern Colorado, the writer found a difference of three inches in length in favor of the Parsons corn, the ear here shown containing 660 kernels, while that of the ordinary corn contained but 480.



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WESTERN FARM LIFE

A Western Magazine for Western Farmers and Stockmen

Comprising Ranch and Range, Farmers Life and Fruit Journal, Trans-Mo. Farmer and Ranchman

Largest Circulation of Any Farm Magazine in the West

Volume XIX | DENVER, COLORADO, AUGUST 1, 1917 | Number 15

Silo and Some of the Holsteins on Virginia Lynn Farm

Dairy Farming Pays on $200 Land

AMONG THE BLACK AND WHITES AT JOHNSTOWN

ALVIN T. STEINEL

TWELVE hundred million dollars is the annual loss to American agriculture from failure of farmers to use the manure produced on their farms. This figure was given out by Carl Vrooman, assistant secretary of agriculture, as a result of his investigation of the fertilizer problem. It represents a condition prevalent in all parts of the country, but here and there may be found exceptions to the rule. It was the writer's privilege, not long since, to visit a district where manure is carefully conserved and put back on the land. Conditions have compelled the farmers to adopt careful methods; not that their soil was deteriorating, but the high price of irrigated land and the necessity for making each acre produce heavily has resulted in the saving of manure, as well as making the best use of leguminous crops, particularly alfalfa, in keeping the soil up.

This is the Johnstown, Colo., dairy district, where milk is produced on $200 land from $200 cows and delivered to the condensery for evaporation and canning. Pastures are limited to creek bottoms, ditch banks and some rough upland that cannot be cultivated with success and is "above the ditch." Land is so valuable by reason of favorable climatic conditions and good water rights that the scrub cow is out of place. She is a poor investment under any conditions, but when the owner of 160 acres must make returns on an investment of $40,000 to $60,000 the boarder cow is unthinkable. Every cow must earn her keep, plus a fair profit, or she goes to the block.

"It doesn't pay to dairy farm under these conditions. The only plan on $200 land is crops that bring big money for little labor," says the bonanza farmer. The answer to that will be found in irrigated farms that are running down, instead of mounting upward in their yields. I saw one beet field near Milliken that is this season producing its eleventh crop of sugar.

"About time to put it in alfalfa," I suggested.

"Not yet," said my informant. "It has been manured from the cow lot year after year, so that last year, its tenth beet crop, gave us 25 tons per acre. See the perfect stand now. The cows give us the fertilizer that adds ten tons to the beet yield. This is over and above the profit on milk."

Bank's Statement as Proof

I have heard lots of prosperity talk in my travels and it makes no impression unless there are visible evidences. The farms all about were certainly good looking; the herds in the pink of condition; the beets in good stand; the silage corn up and coming; the sugar peas in blossom and the first cutting of alfalfa in the windrows, a little light because of the lateness of the season. That looked like prosperity. Furthermore I examined the statement issued at the close of business June 20th, 1917, by the First National bank of Johnstown. This showed deposits amounting to $250,633.63. And Johnstown has a population of just 300. A quarter of a million deposits in its national bank, which is one of two banking institutions located there, is a clear indication that the farmer has been making money.

The significant thing about it is the fact that the money is in the bank in midsummer. What will it be at harvest time? And the fact that the money is there now is the best proof that dairy farming pays, for milk money comes regularly the year round. Every day is harvest day with the good dairy herd.

This inspection of the Johnstown herds was by a party comprising Prof. George E. Morton, State Dairy Commissioner; one of his deputies, Roud McCann; M. E. Knapp, county agriculturist for Weld county, who is also agricultural writer for the Greeley Tribune; Lord Ogilvie, whose writings are well known to readers of the Breeder's Gazette, and R. B. McDermott, editor of the Johnstown Breeze, a breezy little sheet. Our hosts were W. E. Letford, farmer and vice-president of the Johnstown First National bank; T. H. Hill, cashier of the institution, and Gilbert Landell, manager of the condensaries at Johnsmanager of the condensaries at Johnstown and Fort Lupton, owned by the Colorado Condensed Milk Co.

No Cows for Sale

Mr. Hill imposed one restriction upon the correspondents. "Please remember when you write your stories," he said, "that we have no cows for sale in the Johnstown district."

This precaution is a wise one, for the demand for good cows is keen, because of the rapid development of the dairy industry all over the state. Scouts from newly organized districts have already been at Johnstown "just looking around" and, incidentally, picking up a few good cows.

This is decidedly a black and white district, the Holsteins having the call, about ten to one, but there are enough of the other choice dairy breeds to make rivalry keen.

Wisconsin has been heavily drawn upon by the Johnstown district as well as other dairy sections in Colorado. Prof. Morton's deputies have made frequent trips to that state and other eastern dairy centers, to get purebred and high-grade stock, with which to build up the herds of Colorado. The rapid development of the industry has been due in large measure to the activities of the dairy commission. High standards have been set and the response from farmers has been excellent. Helping the farmers to select good cows is one of the chief functions of the department and the farmers have not been slow to take advantage of this expert assistance.

The First National bank at Johnstown also has made that one of its duties. Mr. Hill spends more of his time out among the farmers looking over the herds, or up in Wisconsin to help them in buying, than he does at his bank duties. In fact, he and the other officers of the bank have the broad vision that enables them to see that it is one of the important functions of a bank to give the farmer patron practical help on the road to success. Therefore many herds are bought with money advanced by the bank, which is paid back by the farmers out of the milk checks. This is not philanthropy, but sound business practice, because the bankers know that the cow is the foundation of prosperity for the district.

Breeding Up the Herds

There are some 1,500 cows that supply the Johnstown condensery and there is plenty of scrub stock still left, so that the work of improvement may go on for years. Most farmers have adopted the judicious plan of breeding up by purchasing a few purebred cows and a good sire, rather than disposing of the old herd and buying high-grade animals at once. Of the 165 farmers now delivering milk to the condensery 27 have joined the cow testing association organized last April. The report of Omer N. Matson, the tester, shows 374 cows tested in May; average pounds of milk per cow, 645.4; average butterfat per cow, 31.73 pounds; average cost of feed per cow, $7.27. All but two of the farmers in the association have purebred sires and these two are about to purchase. Two members have decided to dispose of everything except purebreds; six are building modern dairy barns, and nine are constructing silos. These facts from the tester's report indicate real progress.

List of the Members

Following is a list of the members of the association, together with the number and kind of cows each is milking:

W. A. Purvis, Johnstown; 35 Holstein purebred and grades.
J. W. Whowell & Son, Johnstown; 25 Holstein grades.
H. Lammer, Johnstown; 12 Holstein grades.
F. Darlington, Berthoud, R. No. 1; 16 Holstein grades.
Oscar Magnuson, Platteville, R. No. 2; 30 Holstein grades.
J. W. Purvis, Berthoud, R. No. 1; 25 Guernsey purebred and grades.
Henry Hoffner, Johnstown; 15 Holstein purebred and grades.
J. H. Kennedy, Johnstown; 20 Guernsey purebred and grades.
O. E. Webb, Johnstown; 10 Holstein and Shorthorn grades.
B. W. Winkler, Johnstown; 12 Holstein grades.
S. P. Crowley, Milliken; 28 Holstein grades.
John Wailes, Milliken, R. No. 1; 12 Holstein grades.
S. A. Gray, Milliken; 10 Holstein purebred and grades.
S. D. Griffith, Milliken; 10 Holstein grades.
Ralph Harris, Milliken; 22 Holstein grades.
C. H. McNeil & Sons, Johnstown; 24 Holstein grades.
Wm. Schmaljohann, Milliken; 30 Holstein grades.
J. C. Becker, Johnstown; 20 Holstein grades.
Geo. I. Johnston, Loveland; 16 Holstein grades.
Wm. H. Gard, Loveland; 20 Holstein grades.
H. J. Heinricy, Loveland; 15 Holstein grades.
Henry Stroh, Loveland; 16 Holstein and Shorthorn grades.
Van Meter & Krebill, Loveland; 12 Holstein purebreds and grades.
J. D. Pancake, Berthoud; 12 Jersey purebred and grades.
Dohner & Wiebe, Loveland; 12 Holstein grades.
J. W. McWilliams, Loveland; 20 Holstein grades.

J. H. Kennedy is presidont; C. E. Van Meter, vice-president; W. A. Purvis, secretary-treasurer; C. H. McNeil and J. W. Whowell, directors of the association.

Some of the Farms Visited

The first two farms visited, Columbine and Red Cross they aro named, are ownod by Mr. Letford, but farmod by young dairymen who own tho herds and know how to handle them. S. P. Crowloy is the lossee of Columbine farm and ho has 31 head of Holstein high grades of excellent milking quality. A Hinman silo was in courso of eroction on this place.

Ralph Harris, who runs the Red Cross farm, is milking 22 high-grade Holsteins, and ho has a cemont stave silo and modern dairy barn. These

Continued on Page 13

Herd Bull and Two of the Cows on the W. A. Purvis Farm

A History of Parsons' High Altitude Corn

ORIGINATOR OF THE VARIETY TELLS HOW IT WAS BRED UP

Note: Photo of an ear of Parsons' High Altitude corn may be found on page 2. The picture is within three-quarters of an inch of actual size of the ear. This variety of corn thrives up to 7,000 feet and matures practically every season.—Editor.

E. R. PARSONS

IN this article the writer, at the request of the editor, will endeavor to make it clear for those who are interested how the Parsons corn came into existence.

The compelling influence in pioneer work is necessity. In 1880 there was no corn in Colorado that could be relied on to make a crop worth raising. The ordinary agriculturist in those days thot that this was not intended for a corn country and that it was a waste of time trying to raise it. The writer had seen corn growing under the equator and he had also seen it growing in Canada. The adaptation of corn had made a dent in his memory. At this time the prevailing brands were White Australian, Mexico, Yankee Flint and some varieties of squaw corn.

It was impossible, even with deep plowing, to obtain from any of these strains more than 15 or 20 bushels per acre, which meant that all the profit was left in the ground. A corn was required which would do more than pay wages, and about 40 bushels per acre was considered the minimum worth aiming at. This object was attained by crossing and selecting in a very few seasons, but the process was continued for nearly thirty years in order to more nearly complete the processes of adaptation and more thoroly fix the type.

As it is today it is still far from being a professor's corn. It has no show card standing, and is usually the ugly duckling at the fairs; but as Dr. Lory once remarked to the originator, "If it will feed stock and fatten pigs, it is just what we are looking for."

Great Demand for Seed

There are no doubt some excuses for its existence, if we judge by the demand for the seed. There are some even who raise it to use and sell as a sweet corn. It is a strong grower with plenty of foliage, good for either grain, fodder or ensilage, and the stalks contain a fair percentage of sugar. It does not go on a strike in dry weather, and will yield abundantly on our chocolate clay loams or strong sandy soils with good plowing and plenty of cultivation. It is fairly hardy and early, and since Frank Kohler of Calhan, at 6,500 feet, took hold of it and appropriately christened it with high altitude honors, it has further improved in these qualities and others.

Correctly speaking, this corn should not be termed a hybrid, which would imply that it has been crossed with a different species, whereas it is simply a compound cross—a mixture or combination of blood strains from several varieties of corn.

White Australian, on account of its hardiness and vigor, was selected as the female parent, or base to work upon, and several crosses were made. The most satisfactory one which gave some promise of the old horse tooth shape of grain, was obtained by using as the male parent a white dent corn which came unnamed from western Nebraska, very similar, and perhaps identical with what is now called Iowa Silver Mine.

Everyone at that time was talking sweet corn for fodder, and the results of the above cross were bred with Evergreen. After this some of the sweet corn strain was eliminated by selecting those ears which possessed the sweet flavor but the white dent shape and the Australian earliness. The Evergreen blood, however, may still be detected when the Parsons corn is used for table purposes.

Further Crosses Made

The first and second cross materially helped the yield, but the size of the ears not being satisfactory, a further cross was decided upon. For the male parent a hundred day large white dent from western Iowa was selected, which was supposed to be an adapted strain of the Boone county variety.

This was planted about the first of May and protection was given it on cold nights by hilling up with litter. The original corn which was to be crossed with it, being of a much shorter period of growth, was not planted until the first of June and commenced to ear at the time that the Boone late corn was tasseling and pollinating. In crossing an early and a late corn it is somewhat difficult to plant at the right time, so that the male and female organisms, the tassels and the silks, will attain the requisite development at the same time, so that fertilization will take place.

From this cross not many ears were obtained which were large and yet early; but by planting these and exercising a careful and vigorous selection for earliness for a few years, a type was finally established which produces in our short season at least one good-sized ear to every stalk which at harvest time weighs up better than two small ones. And it is good policy at the present stage of development to select for seed with this end in view, altho the time may come, after years of adaptation, when it may be possible to raise two large ears to the stalk.

How It Was Done

The next thing the reader will want to know is how all these crosses were made.

A row of White Australian was planted and then on either side a row of the early white dent. The Australian corn was all detasseled, but it made corn, for its silks were fertilized by the pollen which fell from the tassels of the white dent on either side of it.

When the pollen dust, which is the male element, alights on a silk, a microscopic vivifying germ is absorbed and carried by the sap thru the silk to the seed vesicle on the undeveloped cob, and a grain of corn commences to grow. There is a silk for every grain, and for every silk which is not pollinated there will be found a corresponding blank on the cob when the corn is husked.

While we are on the subject of corn tassels it might be remarked that in very dry weather they may dry up without shedding pollen, and altho the corn continues to grow and apparently produces ears, many of these will be found at shucking time to be all cob and husk. Under these conditions it has been found that the late pollination of replanted corn has sometimes saved a crop with the help of a timely rain; but the common-sense antidote is to plow deeply, and have moisture conserved where the roots can get it, but the drouth cannot.

The Detasseling Method

Altho corn may be crossed by simply mixing it in the field, the only sane way to keep track of it in breeding for a new type is by the detasseling method.

All the crosses to which the corn was subjected were made by this method in the way described and no difficulties were encountered except in breeding early and late varieties together, when allowance must be made at planting time for the difference in the period required for maturity.

It is a saying among plant breeders that it is easy to make a cross, but the trouble is to fix the type so that it will breed true.

The principal factor in evolution bearing on this is the Mendel law, which says that if two varieties are crossed and the first generation allowed to inbreed the resulting progeny will revert or throw back to the original type, in the ratio of three of the dominant type to one of the other.

White Australian has proved a strong strain or dominant type when breeding with others, and if the results of the first cross are allowed to inbreed, to become fertilized by their own pollen, or by pollen from plants raised from grains of the same ear, the seed when planted will revert back to the original types—three of the White Australian to one of the white dent. In plain words, inbreeding undoes the work of crossing, therefore, in fixing a type, it is of paramount importance to avoid it.

Old Theory Is Exploded

It is a common belief that corn is not self-fertilizing—that the silks cannot be fertilized from the pollen from the tassel of the same stalk; but careful experimentation shows that to some extent it is; therefore, not only this close form of inbreeding must be avoided, but also that from brother and sister grains of the same ear.

This is accomplished by selecting a complete set of ears for each row in the breeding patch, and whatever grains are left over at the end of the row must be used for some other purpose; then every alternate row, those from which the seed ears are selected, having been detasseled, there is no chance of inbreeding.

This tendency to revert exists in a diminishing ratio for a number of years, and this method was used practically every season, for it was found that not only was the type becoming permanently fixed, but also the yield acquired by crossing.

The breeders of pure corn types and fancy ears were much opposed to the principle enunciated by the writer many years ago, that crossing increased production, and altho this is generally admitted at the present time, it is also advanced that it can be done only for the one season. This is the truth, but not the whole truth; for if fresh blood is introduced every year, or the detasseling method resorted to, the yield can be maintained indefinitely. The reason for the falling off of the increased production acquired by crossing is owing to the fact that the Mendel law is little understood and generally ignored by breeders and farmers, and the seed from the cross being planted together without detasseling gradually inbreeds and reverts to a type which, altho somewhat mixed, is practically what it was before.

Introducing New Blood

Crossing, however, is not absolutely necessary to increase the yield. The introduction of fresh blood of the same variety, but absolutely unrelated, will have much the same effect. This can be easily effected by swapping half of the seed with some neighbor who uses the same brand of corn. This should be done every year and with a different neighbor, if possible; but if for some reason such a course is impossible, inbreeding may yet be prevented by detasseling.

It is waste of money to purchase a prize ear of corn for a considerable sum and allow the resulting plants to breed together; but if two unrelated ears can be obtained and propagated by the method described, a superior strain may be established.

There are other ways of creating new varieties besides crossing.

Careful selection from any ordinary corn may, if persisted in for a number of years, find its reward in the establishment of an improved type, which apparently has nothing in common with the original.

Breeding from sports or mutants, especially when two or more ears of like characteristics can be obtained, may also prove successful.

Selection is based on the fact that with some exceptions, like produces like.

Unit Quality Law

The unit quality law is an important aid to improvement by selection. It means that there are certain traits or characteristics in plants which in crossing are usually transferred whole or as units instead of being merged or blended. For instance, if a 100-day dent is crossed with a 90-day flint, it would naturally be supposed that these periods would merge, and produce a 95-day corn; but this would not be so to any extent, for the plants from this cross would be nearly all either 90-day or 100-day corn. Some of the 90-day would be dent, some flint, and some mixed, and so with the 100-day plants, vice versa. Thanks to this law, the breeder could now select 90-day dent which before crossing was a 100-day corn. It would still remain, of course, to establish the type which usually requires from six to eight seasons. This unit quality law makes it possible to breed a cross for any one characteristic required and cut out all the others by selection.

In propagating the Parsons corn the largest ears from the driest part of the field were used, because size without drouth resistance could not be obtained in a dry farm corn. Preference was always given to well dented ears, because White Australian, being the dominant strain, there was always a tendency, altho diminishing with years, to revert to flint. No attention was paid to fine points, for this corn was originated to fill a want—for a time—to feed the cows, pigs and chickens on any ranch where it proved to be the best yielder until it was superseded by a better, and the writer knew then, and knows now, that a finer corn is coming, but it could not come in a hurry. The essence of adaptation is time. Forty years ago the dent corns of the East had got no further than central Kansas and Nebraska. They will soon be knocking at the gates of the Rocky Mountains. They are today approaching central Colorado and New Mexico, and even touching on Wyoming.

Wonderful March of Corn

This wonderful march of the corn towards the setting sun is an interesting example of automatic adaptation; for as the farmer on the front buys for seed some of this fine looking dent which has reached his eastern boundary, and after succeeding in raising a crop, sells some of it to the man to the west of him, he forges unconsciously a link in the chain of evolution which at the rate of perhaps only a mile or two a year is slowly but surely accomplishing by self-adaptation the establishing of the much-desired soft dents of the central states in an entirely new and higher western environment.

Big Tractor Demonstration

The National Tractor Demonstration which is to be held at Fremont, Neb., August 6th to 10th, promises to be the biggest working display of farming machinery ever held. Manager A. E. Hildebrand has assurance that all previous attendance records will be broken. Nearly 100 manufacturers will have machines on display on the 3,000 acres of ground secured for demonstration purposes. All of these demonstrations will take place within a radius of three miles of headquarters.

All efforts for this year have been concentrated on the one big tractor show and results are being watched with great interest, because there was some difference of opinion among manufacturers as to whether the one-show plan would prove more effective than the holding of a series of exhibitions, as was the case last season.

The program will include every variety of operation that can be performed by tractors and practically every make of machine will be seen in action. Farmers contemplating investing can find no better opportunity offered them than to attend the big show and watch the tractors at work. Being held in the west, there will undoubtedly be a large attendance from the mountain states, as tractor interest is keen in this section.

The silo adds twenty acres to the farm. Increased production and avoided waste, are two factors that will make the most of our farm operations.

Kicking Up the Dust in Logan County

FARMER'S AUTOMOBILE TRIP IN THE STERLING DISTRICT

Outlet of Sterling Reservoir No. 2

LOOKING to the left, I saw the corner of a 2,000-acre patch of pinto beans; to the right there was a waving field of winter wheat, covering a square mile; straight ahead a road with a dozen automobiles stirring up clouds of dust; behind another dozen machines, taking our dust. This was on the upland overlooking the valley of the Platte in Logan county, Colorado; the upland ten or twelve years ago given over to range cattle; thirty years ago the haunt of antelope and buffalo; today producing food for the world. Only recently much of the country around me was not even fenced, and when one started somewhere to go elsewhere there was nothing to do except to "follow the angling road." Now the angling road has disappeared; square section corners have made the way a lot longer, but far less tiring, because there is something to see on every side—something that looks like real money.

This is one impression that remains in memory of an interesting educational automobile tour, taken at the invitation of the good people of Logan county (town and country) on the second day of July. The purpose was to show one section what the other was doing; to get the farmer on the high-priced land of the valley up to see how his upland brother was doing without the aid of water. The tour was planned by County Agriculturist G. C. Burckhalter and a committee of farmers and townspeople. Everybody who could spare the time was invited and about thirty autos made the trip.

Hard to Tell Difference

There was a time not so long ago when the irrigation farmer felt sorry for the "poor dry lander," as he was called. That time has gone by in all sections where the "poor dry lander" has come into knowledge of what he must do to succeed, where he is basing his farming on livestock—and that means everything from hens to Holsteins—and where he is giving proper attention to tillage methods for moisture conservation.

The sharp line that once showed where the last ditch ran and dry farming began is gradually disappearing. It is still apparent in the home surroundings. Trees and shrubbery are far too often missing on the upland, but when looking at grain crops one is not always certain at first glance whether the field has been irrigated or not. Nothing, however, so clearly shows the value of livestock on any farm as the fact that in this day's tour the practised eye could discover no difference in the quality of stock kept on fifty-dollar land and that kept on the two-hundred-dollar land. So far as feeding and care counts—and it goes a long way—the dry land farmer has just as good a chance as the farmer with the ample water supply. The only visible difference is the need for greater acreage under dry conditions to produce the necessary quantity of feeds.

Farmer Haas' Lecture

The first stop was at the farm of W. F. Haas in the Platte Valley east of Atwood. Mr. Haas had his herd of Holsteins in the corral, ready to show the visitors. He said he had been ten years breeding it up, but now had fifteen head of purebred cows and ten fine calves.

"It pays a lot better than common cows. Feed is too high to put it into non-producers if you want to sell cream," he said. "If I had it to do over again I would buy a few purebreds to start with. The way I did, breeding up from scrub stock, took a long time."

He has a 68-ton solid concrete silo that cost him $325 plus the board of the men who built it and hauling of the material. It is roofed and waterproofed inside with a tar preparation.

"I find silage good for my milk cows as well as for fattening," said Mr. Haas. "It took eight acres of irrigated corn to fill last year, and that was the principal feed of seventeen cows for six months. Silage is about three-fourths of the ration in bulk. One season I put in ten feet of beet tops. They packed in so solid that I thot I would never get thru feeding them. They made good silage, but I prefer the corn."

At the T. K. Probst farm, farther up the valley, the excursionists were shown some twenty head of blooded work horses. This and the T. A. Probst place together, form one of the largest irrigated ranches of the neighborhood. It takes a lot of work stock to care for a thousand acres or more of crops. The stallion, Eldredge, is the head of the stable and sire of many fine animals in the valley.

Willard Band Joins Party

At this point the Willard band met the party, remaining with us during the balance of the trip, and enlivening things with an occasional selection, splendidly played.

From the Probst ranch the caravan turned northward, going to the pasture of E. J. Tomberlin, a breeder of milking Shorthorns. He has fifteen registered animals, this herd having been bred up from one cow. The herd, including the sire, were corralled in a circle of autos, where the animals were photographed, admired and inspected by the visitors. The bull did a little cutting up for a time, but when he discovered that most of his visitors were farmers and not afraid of him, he became docile.

After passing thru Merino, the route turned northwestward to Willard, passing out of the valley and upon the uplands where dry farming is practised. Here, as elsewhere in Colorado, the nation's call for food is finding a large response, in great fields of wheat, beans and corn. The winter wheat was heading out and, while another rain was needed to fill out the heads, the indications were for a fair crop, even as it stood. Beans were up and coming, and corn, in the lister rows, looked fine.

Next there was a short stop at the F. Wautenpaugh farm, where Holsteins furnish the chief income, thru forage crops grown under dry land conditions. This bunch of purebreds made a fine showing.

A Farmer Musician

From there the drive to George Cosselman's was a short one. Cosselman, who is a member of the Willard band, showed a lot more enthusiasm about his cows than he did about music, and he has reason to feel proud of the herd, which is of the Guernsey breed and is a recent purchase, coming from the famous H. D. Parker herd at Greeley. The sire was a second prize winner at the National Western show in Denver last winter.

Heading eastward again, the procession stopped at George Tompkins' farm to see dry land alfalfa and sweet clover. The sweet clover field had just ben cut and it gave a heavy yield of hay.

After looking at a pumping plant which is delivering water for irrigation, the autos turned toward Art Hand's ranch, the dinner stop. Purebred Herefords are the specialty at this ranch, but the prize-winning beef stuff waited in the stalls until the excursionists had satisfied their hunger, which was keen after a morning's drive. Art Hand's deputation for hospitality was amply demonstrated by the supply of ice water and hot coffee, which appeared inexhaustible in spite of calls from more than a hundred thirsty ones.

Guernseys on George Cosselman's Farm Near Willard

Inspecting Hand's Herefords

After lunch the caretakers brot out Cedar Lawn Prince, a 4-year-old Hereford sire, of the famous Grove III strain at Centralia, Mo., and several younger bulls of lesser fame but the same noble lineage. There will be some fine animals out of this herd at the National Western show in Denver next winter. Mr. Hand has found business good, having sold 147 registered bulls this year. Only a week before the inspection trip he shipped 40 head to a Utah ranch, and there are still a hundred purebred bulls on the place. The home ranch comprises 2,800 acres, and there is a large area of leased pasture in the hills along Pawnee creek, where the grass is good.

Mr. Hand has been only five years in pure-bred Herefords, but he has been satisfied with nothing short of the best blood, hence his success.

From Hand's ranch the tour continued northeastward, the next stopping place being Mount Hope farm, owned by W. L. Jenks. This is a dry land farm, with livestock as the chief income, a good herd of Holsteins bringing in steady revenue from milk. Mr. Jenks' pit silo, which is under cover of the barn, was a subject of great interest. The silo is 31 feet deep and holds about 40 tons, which is not sufficient for Mr. Jenks' needs. He expects to dig it ten feet deeper. The cost of the silo was only about $100. In 1916 it took the corn from 15 acres to fill the silo, but the previous year when there was more moisture, only eight acres of corn was needed to fill. The visitors greatly admired the garden at the Jenks farm, with its ripe strawberries and the splendid showing of vegetables of all sorts. Nothing better had been seen in the valley.

Food Crops Are Plentiful

On all sides now were evidences of good dry land farming, this year running perhaps too largely to cash crops, because of the great demand for foodstuffs, but nevertheless, indications that the farmers were increasing their livestock holdings and, consequently, the growing of sure forage crops.

From the upland wheat and bean region the autos next dropped down into another valley, where they were given an object lesson in water storage. This was the inspection of Sterling Reservoir No. 2, with a capacity of 82,000 acre feet of water, and representing an investment of $1,800,000. The reservoir is over half full and its precious load is carefully guarded by a squad of Uncle Sam's men, who allow no one to approach who has no business there.

At the Len Sherwin ranch, the next stop, the "cowboys" had driven up a herd of bulls—not the kind that used to roam these hills in the old days, but purebred Herefords, each individual worth ten times what the average animal was worth 10 or 15 years ago under range conditions. There were 21 registered bulls in the herd driven up for inspection in a corner of the pasture. Across the fence were several specimens of other breeds run by the same owner, but in other pastures. These were Shorthorns and Angus. Mr. Sherwin owns about 4,000 acres and leases 6,000 acres additional for range. Whitefaces are in the majority on the ranch.

The Haley-Harris Lewis Creek ranch was the next stop. Here the manager, Mr. J. B. Smith, acted as host, serving lemonade and cigars to the excursionists. This one of the H-H ranches comprises 920 acres and is devoted at present to hay and feeding operations.

There was one more scheduled stop—the Collard farm at Iliff, one of the show places of Logan county, but the editor's driver was from the Willard section and a long way from home, with a thunder-storm approaching, so there was no time to stop. A passing glance at the fine ranch buildings was an invitation for a more leisurely inspection, which the writer promises himself at some other time. The storm came, but it was disappointing in quantity of rain, tho there was enough to freshen up things a little.

The journey was productive of much good. Aside from establishing pleasant social relationships between town and country, it gave the farmer an opportunity to see at first hand what those in remote sections of the county were doing, and how they were doing it. And it made the man from town realize the extent of the agricultural industry, which is the sole dependence of the townspeople in that section. It had a broadening effect on all who participated and was time well spent. It was a milestone in the agricultural progress of Logan county.—A. T. S.

Art Hand's Herd Bull

Hand's Ranch, the Dinner Stop

Lesson in Planting Street Trees

EXPERIENCE OF A SMALL WESTERN TOWN

PROF. W. J. MORRILL, Colorado State Forester

Our Street: Ours is a typical residential street of a typical Western city of 13,000 inhabitants (actually only about 10,000, of course). The most of the homes on this street are owned by people dwelling in them. We are proud of our homes, our well-kept lawns, our concrete sidewalks and curbing and the macadamized street. We used to be proud of our trees, before our judgment on such matters was trained. How true is the saying, "In ignorance is bliss!"

In snowy winter weather we turn out in the morning and shovel or sweep the snow off the walks, lest the people over on Fourth street have the opportunity to jeer us good-naturedly. In fact, there is rivalry between Third and Fourth streets. They were laid out about the same time, during the boom days thirty years ago, and struggled along in comparative poverty for a decade or longer, each gradually filling up with more or less pretentious houses.

We discarded the old plank sidewalk at least five years before Fourth street did theirs, replacing it with flagstone, and more recently with cement. Then we macadamized our street and put in cement curbs several years before Fourth street did. How old Skin Flynt, the richest man on our street, roared at the expense of these improvements—confiscation of property, ruination, he called them! Perhaps it was the unholy glee in old Flynt's agony which bound the rest of us in the determination to force the improvements thru. He was a retired farmer who still kept a tethered cow, a flock of chickens, a litter of wheelbarrows, buggies, carts and other vehicles in his front dooryard; to make it look like the old home in the country, undoubtedly.

Bixby was one of the first to build in our block. He planted a row of box elders along the street, placing them about eight feet apart. These trees would grow fast, he knew, and by placing them near together, the results would be quickly attained. Sawyer built next, or rather with an intervening lot between him and Bixby. Sawyer planted a mixture—elm, cottonwood and soft maple. Others gradually filtered in, planting whatever trees they preferred, or usually what was easily obtainable, preference being given, in a majority of instances, to the Carolina poplar, as these trees were said to outstrip all others in rate of growth. They did. They lived so fast and furiously that they reached old age and died some ten or fifteen years ago, leaving big, ugly gaps. Ainsly, for some unaccountable reason, planted his row out of alignment with the other trees. He was always original and different, anyway; and he used cottonwoods, which later proved to be of the cotton-bearing gender, and got him in bad with the city authorities, who recently wanted to cut them down.

We did not think much about the species of trees planted in those days, nor where they were placed. The old prairie on which the town was built, of course, had no trees, and any kind looked pretty good to us. Besides, we were not right sure that any tree would grow—and some did not. Whiting sent off somewhere and imported hard maples, which experienced a long, lingering illness and one by one dropped off. Others had the same trouble with fancy tree species from the humid South. One man who moved away years ago left a heritage of silver spruce street trees across the front of his lot. It is a pity he did not move before he established that monument of poor taste to plague the succeeding generation. So our street developed an aimless sort of growth, just like Topsy, with individualism running rampant.

Fourth street, however, had a different beginning. It was laid out by a real estate company and planted to trees, and otherwise more or less improved before the "opening" was held, a free lunch given and a lot given away by vote on that gala day to the most popular bachelor. The trees planted were all the same species, all widely spaced about two rods apart, and all in alignment. Moreover, they stood one just opposite another across the street, and no tree was placed within twenty feet of the intersection of streets. No attention was paid to the lots—a lot might have one tree or it might have two, but the trees were regularly spaced. Facetious remarks were made about the company buying out a job-lot of trees and making them go as far as they dared. They certainly looked remote from each other at first, as if it were feared they would not get along well if too neighborly close. Each tree had a chicken-wire guard around it, held by a fine wire, which would break when the tree outgrew its case. A small area of ground was kept spaded up around the tree.

On Third street, the visiting ranch-tree a convenient hitching-post, and so men and others would find a street in time a majority of our trees became more or less gnawed. It was annoying to find one's tree gnawed, but we let nature take its course—the nature of the horse to gnaw, and the nature of the tree to heal the wound.

Well, to bring the story down to the present time, thirty years from the beginning, this is what we find. Third street is ridiculed and Fourth street is praised for its beauty. Property is cheap on Third street and high on Fourth street. The houses on Third street are just as expensive, kept in as good repair and our lawns are just as good if not better. We are "nearer in" by a block and yet far enough removed from the business section. We should have the preference in location. We should be able to sell for as much or more than the people on Fourth street, but we cannot, and all on account of street trees.

Fourth street has two stately rows of fine trees, all about the same size, all of the same species, desirable, long-lived, handsome, and each almost a duplicate of its fellows in every way. One is reminded of the colonnade which used to lead to the entrance of a Grecian temple of ancient times. These trees have not yet quite touched their tops and they have developed the type of beauty peculiar to their species.

Fifth street was planned, too, before it was built up. Its trees are laid out in the same way, but the trees are of a species different from that of Fourth street, and variety in trees in the newer part of town is gained by using a different species on each street. Third street had aimed at variety on one street and thereby "lost out."

Third street today has twice too many trees and ten times too many species of trees and two or three times too many alignments. We have trees crooked, leaning out over the street to get light, badly pruned trees, suppressed and dying trees, young trees which have replaced the Carolina poplars, diseased trees, decay setting in where horses had gnawed, and, worse yet, Third street people are humiliated in the presence of Fourth street people and are dissatisfied in the general appearance of the street.

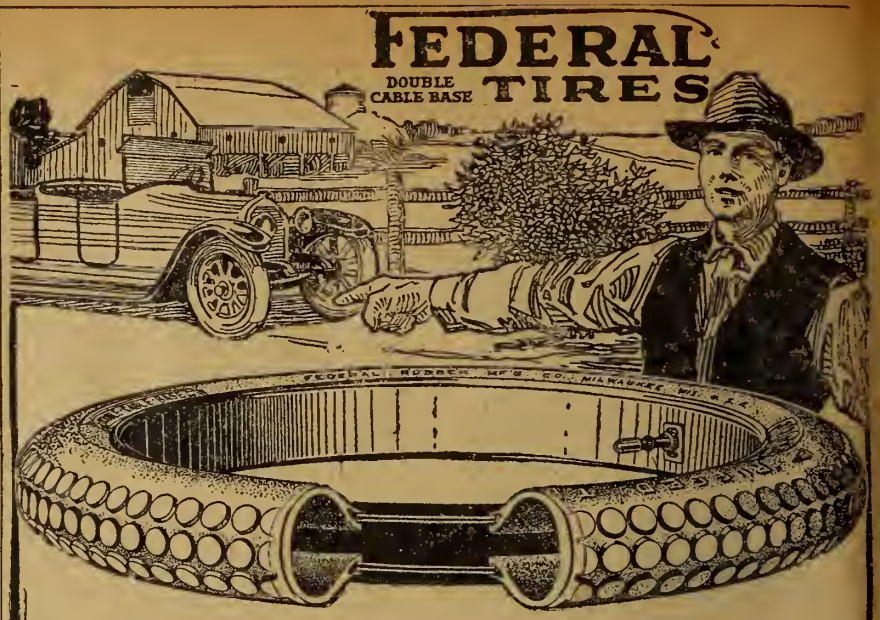
Arkansas Valley Prosperity

Seventy dollars an acre from alfalfa for the season is the prospect before the farmers of the lower Arkansas valley, according to ex-Governor Ammons, who recently visited Holly, Lamar and other points in that section. He went there at the invitation of the Cow Club of Holly, attending a picnic of the club on what is known as the Model farm. He spoke to the farmers on the subject of the food problem.

He found that the alfalfa mills at Holly were paying $12 to $14 a ton for alfalfa right out of the field; that the mills were expecting to ship out this season fully 75,000 tons of alfalfa meal, which goes on the markets for stock feed.

"The second cutting was just beginning," said the Governor, "and most of the fields will be cut four times this season. I found irrigated wheat looking much better than reported. In a drive of some 75 to 100 miles I did not see half a dozen poor fields of wheat. This crop has now been cut, so there isn't any further question about wheat results in the lower Arkansas valley. Sugar beets also were looking fine. I was shown beets already weighing about a pound. The corn looks good. In fact, bumper crops are in prospect thruout the valley.

"The dairying industry was the biggest surprise to me. I visited the same section some years ago on institute work, and this time I found everything changed. Nothing looks familiar. The big dairy barns and silos have been put up since my previous visit, and on every hand I saw herds of purebred and high-grade Holsteins and other dairy breeds that were bringing in a steady revenue to the owners. On the Model farm, where the picnic was held, there is a herd of 30 cows now bringing a milk check of $600 to $800 a month. With such producers it is no wonder that the farmers of that district are successful. They have invested large sums in good stock and they are conducting their operations on the diversified plan, with livestock as a basis, and putting the manure back on the land. That is the kind of farming that pays. The condensery at Lamar is paying the farmers a thousand dollars a day for milk at present, so the farmer is getting back something on his investment in good cows."



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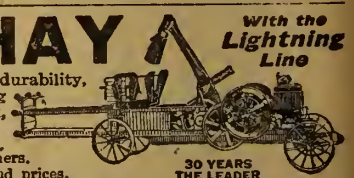

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Minister Describes Plains Life

RELIGION AND BUSINESS ARE TOUCHED UPON

REV. GEO. McNAB

The thriving village of Arapahoe is on the Union Pacific railroad, 187 miles southeast of Denver in the eastern end of Cheyenne county near the Kansas line. It is a promising place, being the trading point for a good sized district. There are three good stores, lumber yard, while so much business is done that the railroad company had to lay another track lately. The Farmers' Union is strong and has enlarged its plant recently so as t osupply more of the needs of its members.

The locality is a typical dry farming proposition, with the common accompaniments of homes being rather far apart and some evidences that, at some previous time, there were more people living here than now. But there are advantages in this region for those that can understand them. This region is finely adapted to stock-raising, and tho the day of the great herds of cattle has almost ended here, still it seems that far more stock is in the country now, tho in smaller bunches, than was known in the old time. There has been a notable development of the dairy business. For a time Arapahoe held the record for shipping cream, but for a year or more a cheese factory has been in operation which makes a good home market for local milk and has put Arapahoe on the map as producing a good article which already is bringing the top price on the market.

The name "dry farming" scares some people, but they should think of what F. D. Coburn said: "It is not so much that there is an insufficiency of moisture as that there is something to be desired for its distribution." Really, even the Cheyenne county reaches of the Smoky Hill river have ten feet of water in them sometimes. Consequently, the region is well adapted for dairying. A sufficiency of fodder can be raised generally, while the long, open winter grazing usually found gives cattle a great chance. This makes almost ideal conditions for a strong and ambitious young man to get a start in cattle. At the lodge the other night this story was told: "I came in here ten years ago and took up a homestead with nothing, and now I have a bunch of 72 head." This might be called the history of many families here who with faith and patience, joined to hard work and also some favorable breaks of the game, as baseball men say, achieved success and now reap the rewards.

The Arapahoe community is notable, too, for the fine solution of difficult conditions in things religious. This was a religious settlement all thru this part of the country, as is seen by the number of good little Sunday schools kept up with such fidelity and zeal all around here. Of course, in the beginning of the village life an effort was made to have a Sunday school. This was organized and held its sessions in storerooms and schoolhouse, but work was hampered by the surroundings. At length it was seen that a place must be made for holding religious services and meeting all such community needs. Then the women of the community met and organized the Ladies' Social Circle. Then the whole community far and near was canvassed for funds, and friends "back home" were asked to help. The result was that money and labor was pledged enough to build a chapel of concrete 42 x 28 feet, with side walls 10 feet high. This building was to be used for every need, but chiefly for religious purposes. The next step was made by one of the strong denominations sending in a representative and presently a church was organized and denominational funds were available to secure a minister for the church in expectation that it would soon come to self-support. The Colorado plan of Church Polity was followed, by which sectarian rivalry was eliminated and the field left to the body organizing the church. However, the local church is to be regarded only as the nucleus of the work, which aims to cover as wide a territory as possible and make the church really a community organization. Accordingly the preacher divides his time among seven preaching points and holds services regularly, so far as possible three services being scheduled for each Sabbath day, calling for a drive on the average of 20 miles. But this is only a small part of a country preacher's work. There is great need for the old-fashioned pastoral visitation, because the exacting demands of stock raising and dairying keep many people away from church. Also, strange conditions of weather reduce church attendance. The Colorado climate is ideal, but occasionally spells of weather are indescribable. When a fog drifts across the prairie and the main trails across the open range are hard to identify, landmarks being hidden, then people must stay home from church, etc. This points out the need for pastoral work. The question rises—Do people want it? Yes, surely they do, for but few spurs to the mind are found on the prairie, and thus a visitor is cordially welcomed. Moreover, many of the people came here after enjoying very high privileges in the homes "back east." There is a real desire for the higher things and always there are invitations for the preacher to come. There is a growth, too, of helpers to the work that seek out places where the preacher should go and plan trips for him. A local humorist, in trying to describe the need and its remedy, declared that the only way to do would be to put a Bible into every "Henry" as the Gideons did for the hotel bedrooms. Manifestly, the personal touch is requisite. Wherefore God raised up men with the pastoral feeling. Thus on this field hundreds of visits are made and a mileage traveled of 2,500 yearly, nothing for an automobile, but creditable for one horse.

Plow Under the Trash

Below is a dialogue overheard between Dr. Vernon T. Cooke, the noted dry farming expert, who is in Colorado at present, and a farmer who came from an eastern state. Dr. Cooke opens the conversation:

"What kind of a drill do you use?"

"Oh, a press wheel drill. It gives a firm covering of soil on the seed sown, keeps growing plants warm and snug, prevents some evaporation and enables the young, growing crops to withstand more cold and freezing weather."

"Which do you prefer, single or double disk?"

"Single. The double disk wears out too soon."

"Does it wear out any sooner than the single?"

"Well—I think so, and I object to the double disk because it clogs up with trash too easily and the single does not."

"But all trash should be underground to improve the texture of the soil and enable it to hold more moisture and make more fertility available for the growing plants."

"Ah, yes, but what you plow under won't rot."

"Yes, it will, in time, with moisture; and without moisture in your soil you cannot raise crops. Trash on one's seed bed shows poor farming and poor preparation of the soil."

Good Advice

A Chicago music publisher the other day received from a young Nebraska girl a touching little ballad of her own composition, entitled "I Wonder If He'll Miss Me?"

He returned the effort to the sender with the following note:

"Dear Madam—If he does, he ought never to be trusted with firearms again."

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A Suggestion From Ammons

Let the federal government send commissary officers direct into the field and buy from the farmer for the needs of the army and navy. This is the suggestion made by ex-Governor Ammons to Carl Vrooman, assistant secretary of agriculture, during his recent visit to Denver. If adopted the suggestion will solve the marketing problems for many of our staple products, especially the beans, wheat and potatoes of the mountain states.

At the urgent call of the government, the farmers of the thinly populated states have greatly increased their acreage in all lines of food. Vast areas of prairie and mountain land which had been in grass were plowed up by tractors and converted into cultivated fields. Mr. Vrooman declared to his Colorado audiences that he was astonished at what he had heard and seen. The eastern states have been none the less patriotic in the effort to increase food production, but with little land available for increased acreage, the farmers were compelled to confine their efforts to intensive farming, or rotation changes in order to meet the government's needs. Because of this, the increase in the eastern and middle states, according to Mr. Vrooman, will not be much over 10 per cent. In the West, however, he has found an increase of 20 to 25 per cent in acreage of food crops, with prospects for a good yield.

This has developed an acute problem, namely the marketing of the surplus in states where the population is comparatively sparse and consumption limited. Just how to solve this problem in the short time intervening before harvest has been a matter of some concern. The United States Office of Markets, thru its Colorado division, has taken several definite and practical steps in the right direction, namely thru the organization of the Colorado Bean Growers' association, by disseminating information on the subject of storing food; thru preservation of food in the home by canning, drying and other methods of conservation. All of this is having its effect, but as far as the bulk of the food product is concerned, there is still the usual danger of the speculator stepping into the breach this fall, buying up the surplus and holding it for excessive prices, to be gouged out of the consumer.

To prevent this situation, ex-Governor Ammons makes the suggestion that the government itself step in and buy directly from the grower our surplus staples for use of the army and navy, as well as to supply the commissary departments of the allied armies, if need be. The government is amply able to provide storage facilities and hold the crop until it can be moved to the mobilization camps or shipped abroad. Individual farmers cannot provide the storage necessary to hold bulky crops of grain or beans, hence the danger that the experience of last season will be repeated; namely, that the farmer will sell his wheat at around $1.25 per bushel and buy back flour on the basis of three dollar wheat, the profit having gone into the pockets of the middleman.

Mr. Vrooman touched upon this question in his address to the farmers at Teller's grove in Boulder county, declaring that the food pirate would find his calling a difficult one in future. These assurances are welcome and the producer and consumer (in many instances the two classes are one and the same), will observe with interest just how they are to be carried into effect. The time for good intentions has passed. There is an undercurrent of determination among the people to see the finish of the traitors who have gouged the public past endurance. Mr. Vrooman undoubtedly felt this during his western trip and he will make a report at Washington that will open the eyes of the government to a danger within as grave as that which threatens from the enemy without.

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Vrooman on the Food Program

Carl Vrooman, assistant secretary of agriculture, came out from Washington to confer with leaders in agriculture regarding the world food shortage. He declared that the main contribution America can make toward winning the war is in supplying food to starving Europe and for the maintenance of our own and the Allied armies. "Farmers are doing their share when they fight the battles of democracy in the furrows," he said. He regretted the fact that the Department of Agriculture, three months after the declaration of war, was still on a peace basis, due to the dilatory tactics of congress, in failure to take prompt action on the food conservation program.

"This," he said, "means a loss to everybody except the food pirate. It is a national tragedy."

He explained to an audience of farmers in Boulder county that the object of the administration was to see that the farmer got full value for all he produced; that he got as good or better prices than last season; and that food would be sold to the consumer at lower prices than he has been paying. In short, the speculator's profit is to be squeezed out. The farmer will get what the present high cost of labor, implements and maintenance of livestock justify, and still the consumer will buy for less, because illegitimate profit to the middleman will be eliminated. This is the ideal the administration is striving for.

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Patriotism for Publicity

The recent sale of Liberty bonds was a remarkable illustration of the patriotism of press and public. The newspapers and periodicals turned over their office keys to Mr. McAdoo and said: "Go to it, Mac, the space is yours." Not being the diffident kind, Mr. McAdoo accepted the invitation. Publicity put over the loan and the Secretary of the Treasury has made public acknowledgment of the fact.

But what we wish to remark is this: What reason has any purchaser of Liberty bonds for the belief that the press owes him a free notice because of his purchases, even if they were made for the benefit of employes who have the option of paying the obligation on their own terms? A commendable thing, to be sure, but isn't it in bad taste for thos ewho have done this commendable thing to ask the press to praise them for it? Patriotism for the sake of publicity is hardly up to the American level of these war times. It is on no higher plane than the "patriotism for profit" so severely scored by President Wilson and the public in general.

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An Impression of Hoover

From M. D. Munn, president of the National Dairy Council, comes the following estimate of Herbert C. Hoover, United States Food Commissioner:

"One's first impression in meeting Mr. Hoover is that you are talking with a man who is deadly in earnest, tremendously capable and possessed of unlimited energy and executive ability. His every act and word radiates and beams with patriotic spirit. As the interview progressed I became deeply impressed with his grasp of the tremendous work about to be placed under his control and his anxious desire fairly but effectively to carry on this work. He meets you with the utmost frankness and invites equal frankness from you, and you are impressed with the realization that he expects and indeed demands absolute sincerity and unselfishness from all those associated with him and his work. He impressed me with being an ideal man for the work he has been selected to do."

Mr. Hoover serves the nation without pay. He has tackled the job of food conservation and distribution with the same spirit that characterized his efforts in Belgium, where he administered the wants of the starving for over two years, sweeping away obstacles that appeared to be insurmountable. Success to him in his fight on the food pirates.

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Public Sale for Church

A novel way of raising funds for building a village church was adopted at Stonington, Baca county, Colorado, where a public sale was scheduled to be held July 28th. Every article offered was to be sold for the benefit of, and the entire proceeds donated to, the church building fund. Farmers were urged to bring in calves, colts, pigs, chickens, wagons, buggies, harness, household furnishings—in fact, anything and everything that is usually found at a public sale. The auctioneers and clerk gave their services free. The plan has many things to commend it but it is to be hoped that the liberality shown in offerings for the sale will be continued after the church is built and a pastor installed.

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The President on War Profits

From President Wilson's statement on war profits:

"Patriotism has nothing to do with profits in a case like this. Patriotism and profits ought never in the present circumstances to be mentioned together.

"In these days of our supreme trial, when we are sending hundreds of thousands of our young men across the seas to serve a great cause, no true man who stays behind to work for them, and sustain them by his labors, will ask himself what he is personally going to make out of that labor.

"WHEN THEY ARE GIVING THEIR LIVES, WILL HE NOT GIVE AT LEAST HIS MONEY?"

Commenting on the plea that business must be assured enormous profits in order "to stimulate production," the President said:

"DO THEY MEAN THAT YOU MUST BE PAID, MUST BE BRIBED, TO MAKE YOUR CONTRIBUTION, A CONTRIBUTION THAT COSTS YOU NEITHER A DROP OF BLOOD NOR A TEAR, WHEN THE WHOLE WORLD IS IN TRAVAIL?

"IT IS INCONCEIVABLE."

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School of Mines Management

Dr. Ketchum's refusal to accept the presidency of the School of Mines illustrates one condition in the educational world perhaps not fully understood by the public at large. Salaries of professors are rarely, if ever, sufficient to accumulate wealth. Success in their line of work is their goal. From an institutional standpoint, conditions at this school have, for a long time, been chaotic. Because of the attitude of the management a strong administration has been practically impossible. So long as students' strikes and outside business or other interests are permitted to control the intitution to the detriment of salutary administrative policies, men like Dr. Ketchum will hesitate to chance a throw of their whole life's work in so uncertain a game. Until the board can see its way to stand squarely behind a strong administration, nothing but the present vacillating weakness may be expected. The School of Mines is the best financed and one of the most needed institutions in the state, and the people of Colorado will insist that its management be made efficient or be changed.—E. M. Ammons.

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Sweet Clover Pasture

With the exception of alfalfa on fertile soils, no other leguminous crop will furnish as much nutritious pasturage from early spring until late fall as sweet clover, when it is properly handled. Livestock thrive on it. Animals which have never been fed sweet clover may refuse to eat it at first, but this distaste can be overcome by turning them on the pasture as soon as the plants start growth. There is practically no danger from bloat from sweet clover, according to Farmers' Bulletin 820, "Sweet Clover; Utilization," which has just been issued by the United States Department of Agriculture.

When sweet clover has been seeded two years in succession on separate fields, the fields sown the first year may be pastured until the middle of June, when the stock should be turned on the spring seeding. When handled in this manner excellent pasturage is provided thruout the summer and a hay or seed crop may be harvested from the field seeded the previous season.

Some of the best pastures in Iowa consist of a mixture of Kentucky bluegrass, timothy and sweet clover. On one large farm stock is pastured on meadows containing this mixture from the first part of April to the middle of June. From this time until the first part of September the stock is kept on one-half to two-thirds the total pasturage acreage. The remainder of the pasture land is permitted to mature a seed crop. Usually from two to four bushels per acre of recleaned seed is obtained from this portion of the pasture. After the seed crop is harvested, the stock again is turned on to this acreage where they feed on the grasses and first-year sweet clover plants until cold weather. The seed which shatters when the crop is out is usually sufficient to reseed the pasture.

It is essential that sufficient stock be kept on the pastures to keep the plants eaten rather closely, so that at all times there will be an abundance of fresh shoots. Grazing induces the plants to send out many young shoots close to the ground, so that when the plants are permitted to mature seed a much larger number of stalks are formed than would be the case if the first crop were out for hay. Excellent stands of sweet clover will produce an abundance of pasturage for two to three mature animals per acre, from early spring to the middle of June. Cattle which are pastured on sweet clover alone crave dry food. Straw or hay should be present in the meadow at all times.

Experiments by many farmers in the Middle West show that sweet clover is an excellent pasture for dairy cattle. When cows are turned on sweet clover from grass pastures the flow of milk is increased and its quality improved. Other conditions being normal, this increase in milk production will continue thruout the summer, as the plants produce an abundance of green forage during the hot, dry months. If pastures are handled properly they will carry at least one milch cow to the acre during the summer months. Tainting of milk and butter, sometimes reported, may be avoided by taking the cows off the pasture two hours before milking and keeping them off until after milking the following morning.

Sweet clover has proved to be an excellent pasturage crop for hogs. It is usually seeded alone and pastured for two seasons. The hogs may be turned on the fields the first year as soon as the plants have made a six-inch growth. From this time until late fall an abundance of forage is produced, as pasturing induces the plants to send out many tender, succulent branches. Pasturing the second season may begin as soon as the growth starts in the spring. If the field is not closely grazed the second season it is advisable to clip it occasionally, leaving an eight-inch stubble, so as to produce a more succulent growth.

Never would have been need of a "swat the fly" campaign if Noah had swatted the couple which walked up the gangplank of the ark.

Comment by Farmer Putnam

OUR FRIEND FROM MISSOURI ADDRESSES FARMERS' MEETING IN DISTRICT 19 KIT CARSON COUNTY

Selbort, Colo., July 12, 1917.

RECKON you-all want me to tell you somothin' about dry farmin'. Back in Missouri whoro I como from we don't know nothin' about the subject. Whon it gits dry back there we jes nachually gives up. Somo of you folks out hero on the prairie hain't happy onless its tolerable dry and you kin kick. It's human natur' fur people to want to have somethin' to complain about and if it hain't wet weather its bocause it's too dry. Tain't never exactly right fur everybody. That would be heaven and we'd be unhappy if wo got there before our time.

Anyhow, what's the use of goin' to heaven when wo kin live in Colorado?

When I was a young feller the old man took us out to Kansas to go on a homostead. My dad wasn't much fur farmin', but he'd been readin' them railroad folders what told him about the Kansas rainbelt. You've all read about the rainbelt. It used to be a good deal further east, but it kept movin' west along with them real estate mcn and finally got as fur as Kit Carson county and it's here yet, only the belt slipped and it ain't workin' just now.

Anyhow the Putnams went to homesteadin' down in Kansas. I kin remember how it looked when my dad picked out the place. It was in June just after a hard rain and the buffalo grass was like a green carpet, with the flowers a-peepin' out. They was big ponds all around with real water in 'em and the country looked fresher than the land locators that was showin' us the place. We picked out a nice 160—the greenest spot we could find; in fact It was as green as we was. Then we went back to town where the family was puttin' up in a hotel, waitin' fur the farm to be found.

About a month later we finally got the papers all fixed up and we borrowed a waggin and went out, bag and baggage. When we got to the place it was changed. It hadn't rained none since we located it and the grass dried up an a prairie fire come along and blacked up the face of the country. When we come to look close we found that where all thc nice green grass had been they wasn't nuthin' now but sand. Our homestead was located in the sandhills! Well, it was too late to kick; the locator was busy somewheres else and we had to take what he give us. We put up a tent and next a sod house and by and by we got awful busy. It was the rattlesnake season and durin' the first summer we killed one fur every acre—total, one hundred and sixty. My dad said if he'd a-knowed how that country could produce reptiles he would-a brought a oil press along and set up in thc snake oil business. That's about all the crop there was the first year, because we was too late gittin' on the place to do much besides killing snakes, prairie dogs and rabbits. Them latter we eat. Skunks and badgers was plentiful and they was plenty of prairie chickens left.

We had two cows by the name of Rosie and Nellie, and they done us fur work hosses, bein' hitched to the plow and to the sledge with which we hauled what there was to haul. We didn't have no waggin yet. The cows give enough milk fur the family, and we had cornmeal fur mush. Rabbit stew two or three times a week, sometimes a prairie chicken, mush and milk, cornbread, and when we run out ot coffee we made a substitute outen parched barley that tasted and looked dark brown if nothin' else.

We got along fine exceptin' fur a run of hard luck. One of the boys was bit by a rattler and died; one of the gals ett some pizen larkspur and nearly died, but got over it; a prairie fire come lappin' all around the edges of thc wheat crop, but skipped it when the wind turned because my dad got down on his knees and prayed.

Well, the rainbelt had moved on west of us and we had lots of fine sunshine, brilliant sunshine. This was alright fur us barefoot kids, but hard on the crops, specially because of them hot winds. By and by the corn was dried up and the wheat never got more'n six inches high and the rabbits quit comin' to the back door, and the prairie chickens flew north fur the summer, and the ponds dried up so's the mud turtles in the bottom all croaked, and the prairie was brown and the sand begin to blow over everything, and our money run out and my dad he got kind-a discouraged, seein' they wasn't nothin' to harvest exceptin' thistles and sunflowers, so he wrote back to the folks in Missouri fur money and we loaded our stuff up and left the homestead. It's still there, but some other feller with more grit took it and he's rich now.

I'm a-tellin' you them few pussonel facts so's you-all kin see that my writin' about homesteadin' ain't hot air; that I had my turn at it; that I lived in a dugout first and later in a sod house; that I swallered sand with my mother's pancakes when the dust storms was sweepin' over the prairie; that I sat behind the kitchen stove tryin' to keep warm with a fire of sunflower stalks, corn cobs and cow chips when the mercury was down to zero. In them days we didn't have no Fords to haul us over the prairie and no Flints to tell us what to do. We'd a-thot a feller was crazy if he'd a-told us that some day the farmers that took up them homesteads we abandoned would be chasin' around at thirty and forty miles a hour in a buzz waggin, goin' to Californy fur their winter vacations and havin' a wad in the bank as big as two fists. Autos wasn't invented, they wasn't no telephones exceptin' in the big cities and nobody hadn't even dreamed about movin' picture shows.

I kin recolleck my dad didn't have no use fur the country west of the Missouri river after that, but he didn't git blue about it. He went right back to buckin' another game and he made good. He wasn't so much of a optimist, tho, as one of our neighbors that went down to Arkansaw and was leanin' over the fence in a sorry kind of a way when a stranger drove by and sez: "What's the matter, neighbor, in trouble?"

"Oh, I reckon not. Been bavin' a little hard luck, that's all."

"What's happened?"

"Oh, the flood wiped out my crops two weeks ago; tuk all my corn and oats; washed away the pigpen and my three shotes went down the river with it. Then lightnin' struck and killed my hosses and burned the barn. The next day my wife died of a fever and two of the kids is sick with it now. The mortgage is overdue and I ain't got nuthin' to pay the interest with and they ain't nuthin' to eat in the house. I'm gittin' a little discouraged, neighbor, but I reckon I'll live thru it."

So I guess we wasn't so hard up after all. They is allus some other feller that's in worser shape.

Now about dry farmin'. Some of the folks that I'm acquainted with in Denver keeps sayin':

"Putman, what makes you call Eastern Colorado a dry farmin' section; why don't you say non-irrigated?"

Well, I reckon I could say "non-irrigated" if it wasn't such a long word, but that wouldn't make the country any wetter. The thing is just this: We know about how much moisture we kin count on and we got to farm accordin'. The Weather Bureau down in Denver has been keepin' the record fur forty years and it shows the rainfall to be on the average 14 inches a year. Here in Kit Carson county it's better, bein' around 18 inches, I reckon.

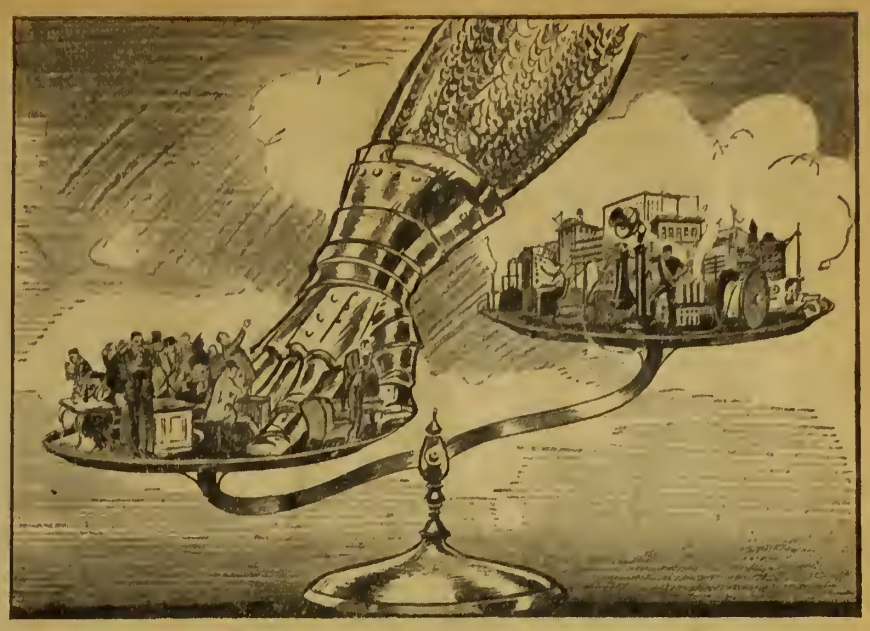
Now, folks, you sometimes hear people say the climate changes when a country settles up. No sech luck. The climate don't change so's you kin notice it in lessen a thousann years and they ain't many in this audience that's a-goin' to live a thousand years unless they changes their ways a mighty lot.

They is just so much water in the ocean and in the rivers and lakes that is drawed up to the sky by the sun and made into clouds, and no more. I've heard people say the irrigation ditches and lakes is makin' the country wetter by causin' more evaporation and more clouds which comes down in showers. If we stop to think a minit we kin see that this ain't so. They ain't no more water than they allus was, only we hold it back some and use it. We cultivate the ground and plant it, and that gives us somethin' to hold the moisture and keeps it from runnin' off into the ground or into the rivers. Plants don't draw no rain, they uses it up. I'm a-thinkin' that you-all kin figger on havin' 18 inches of rainfall on the average fur a thousand or ten thousand years. What you have to do is to learn to use what you get and not be dreamin' about the climate changin', or figgerin' that the rainbelt will move over this way some day soon.

What are we goin' to do about it? Jest two or three things: plow deep to store the moisture in the soil, and then work the ground; put manure back on the land and plow under the straw instead of burning it, or put in a green manuring crop and plow it under. Anything that'll make the soil hold more water is good. The other thing is to work with the crops we got now and make 'em mature with less rain. That's work fur the experiment stations, and it takes years before we kin see the effect, but somebody ought to tackle the job. The trouble with us is that we're allus a-lookin' fur some way to git rich quick and some of us'd ruther lease our land fur oil drillin' then drill along the furrows with a cultivator.

If you think you've got a hard row to hoe out here on the plains, git it out of your system. This country where it rains less'n twenty inches a year ain't no exception. More'n half of the earth's surface has got a rainfall that ain't no bigger then Kit Carson county's rainfall. The trouble with us is we was raised in Missouri or Iowa, and we're allus hankerin' fur them "good old days" when the "rain fell on the just and the unjust" and just about drowned them out every spring. Let's furgit them old days; they ain't no gain in regrettin'. Let's be glad we live in glorious Colorado, where they don't have no cyclones or chills and fever, and even if it's dry—purty durn bone dry since July 1st—let's be thankful fur health, happiness and the children, and don't apologize fur drivin' a Ford. Be thankful you don't have to use cows to plow with like me and my dad done when we homesteaded.

THOMAS JEFFERSON PUTNAM.



The Weight of War

The heavy hand of war has disturbed the balance between supply and demand the world over. Our problem of serving the public has all at once assumed a new and weightier aspect.

Extraordinary demands on telephone service by the Government have been made and are being met. Equipment must be provided for the great training camps, the coast-defense stations must be linked together by means of communication, and the facilities perfected to put the Government in touch with the entire country at a moment's notice.

In planning for additions to the plant of the Bell System for 1917, one hundred and thirty millions of dollars were apportioned. This is by far the largest program ever undertaken.

But the cost of raw materials has doubled in a year. Adequate supplies of copper, lead, wire, steel and other essentials of new equipment are becoming harder to get at any price, for the demands of war must be met.

Under the pressure of business incident to the war, the telephone-using public must co-operate in order that our new plans to meet the extraordinary growth in telephone stations and traffic may be made adequate.

The elimination of unnecessary telephone calls is a patriotic duty just as is the elimination of all waste at such a time. Your Government must have a "clear talk track."

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Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and thru the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Selling Cow With Cancer

Answer to F. B., New Mexico: Selling cow with cancer of the eye: The animal may be sold for beef. If offered at any market where there is United States inspection the carcass will be subjected to a post-mortem examination and the affected parts will be thrown out. If only the head is affected the balance of the carcass will be passed for beef. Just how much under the market would be paid for the animal depends upon the condition of the cow and upon the buyer.

Rupture in Colts

What causes rupture in young colts, and how can it be successfully cured? It occurs in the navel while quite young, generally between the age of three and thirty days. Four of our fine colts already this year are ruptured, and such is the case each year, but not so bad before.—C. B., Fremont Co., Colo.

The floor of the abdominal wall is weakened because of the opening where the umbilical cord was joined to the fetus. In the human the ruptured cord is disinfected and a bandage applied to protect the weakened wall until healing has taken place. If the same precaution could be taken with colts there would be no rupture, and few cases of joint ill. These ruptures almost invariably disappear before the colt is 2 years old, after which time surgical interference is warranted. Navel ruptures in small colts should not materially depreciate their value.—G. H. G.

Trouble Among Horses

Two adjoining neighbors and myself are puzzled over an affliction among our horses. The trouble seems to be almost altogether in the hind legs and quarters; stand ankle-cocked, legs drawn under them, and seem to be weak in the legs, shift the weight from one foot to the other, much of the time, so much as to make a weaving or swinging motion; legs twitch or jerk considerably; pulse and respiration natural, appetite good. Trouble reaches its worst in about two days after the first symptoms. One neighbor worked his mare until noon one day and she died next evening. I had one taken Sunday and she died Thursday; others were afflicted four or five days and got all right, except a 3-year-old mare that has been afflicted for twelve days and is still bad. For two or three days she got almost natural, then got worse.—A. S. H., Ordway, Colo.

From the description given, I am unable to make a definite diagnosis, but have three suggestions. One is influenza, which is fairly prevalent thruout the state and which might give symptoms such as you suggest. Another is swamp fever or infectious anemia. Lastly, since you are in an anthraz district, it might be this disease. I would recommend that you obtain the services of the state veterinarian if there are a number of cases and the disease appears to be infectious. There was a veterinarian at Ordway up until quite recently, and if he is still there he should be called upon to see the animals.—Dr. I. E. Newsome, Veterinary Pathologist, Colorado Agricultural College.

Probably Caused by Loco

I have some yearling heifers that are drinking alkali water. They seem to fatten on it for a while, but now they won't eat or drink and walk as tho they were blind. They will eat if you shove the hay in their jaws, and swallow when you get water back in their mouths. We turned them out on some ponds that are not alkali and they only wade around in it and won't drink. I want to know whether they are alkalied or not, and if there is anything that can be done for them.—E. A. H., Model, Colo.

Experiments carried on at the South Dakota Experiment Station indicate that there is no alkali water strong enough in that state to seriously affect animals. This experiment, combined with our own experience, causes us to suspect that the "alkalied" condition is due to something else in each case. Possibly the animals are eating too many "loco" weeds.—G. H. G.

Non-Irrigable Homestead

I have a 160-acre homestead; made additional 160-acre entry—320 acres. Water in the La Plata is all adjudicated; there has been no way for me to get water on the above land without buying an improved ranch. Can I prove up on it without trouble yet? There are ditches above me, but it costs a lot of money to buy into the ditch. Will the government give me title when I comply with the law on 320 acres?—W. H. D., Hesperus, Colo.

If the government has designated the land as dry farming land and coming under the 320-acre act, all known water supplies at reasonable cost have been considered. Of course, if the claimant's additional entry has not been so designated, it would have to be designated upon petition of the applicant, and in that petition representations as to non-irrigability of the land would have to be made, and all the facts concerning a water supply shown. If after such a showing the land is designated, then there would seem to be no doubt that final proof could be made on the 320 acres.

Keeping Butter in Brine

In reply to inquiry from F. B., New Mexico, concerning a method of keeping butter until winter The only really satisfactory way is cold storage. Butter can be preserved in brine, but usually is strong when it comes out of the brine. It is useful if one does not have too fine a taste for flavor in butter. Make a very strong brine, print the butter in bricks, so that the brine may surround them, and pack in a vessel so that there are as complete spaces as possible around each brick.

Identification of Grasses

Answer to R. B. G., Wendover, Wyo.: The three samples of grass sent for identification are as follows:

No. 1—This is commonly called Giant Rye Grass. It is one of our native grasses, botanically called Elymus Condensatus. It is found in valleys and along banks of streams and ravines, especially where there is somewhat of a salty condition of the soil.

No. 2—This is commonly known as Green Stipa, or Porcupine Grass. The botanical name is Stipa Viridula. It is one of the grasses found thruout the range country in the lower altitudes of the state.

No. 3—This is an introduced brome grass, botanically known as Bromus Tectorum. It is one of the brome grasses that has been naturalized. The brome grass would be about the same as the common brome provided the seed could be obtained. This is the difficulty in using any of these grasses for pasture or meadow. It would be impossible to obtain the seed, as they are not grown on a commercial scale. There are many of these grasses that make good forage crops, but are not very thick on the ground and in many cases are not widely distributed.—T. S. Parsons, Agronomist, University of Wyoming.

Knocking a Silage Lie

We started to dig a silo. Got down a few feet when we heard from so many that the cows' teeth became rotten and after a few years fall out. If you can give me advice along this line, I surely will appreciate it.—G. A. R., Arriba, Colo.

There is absolutely no truth in the statement that cows' teeth become rotten and fall out from eating silage. You can finish your pit silo and you need have no fear of feeding ensilage to your cows if it is properly put up and packed. We are asking the State Experiment Station at Fort Collins to send you copy of a bulletin on silos and silage which will give you full information on the subject.

Sore Mouth in Pigs

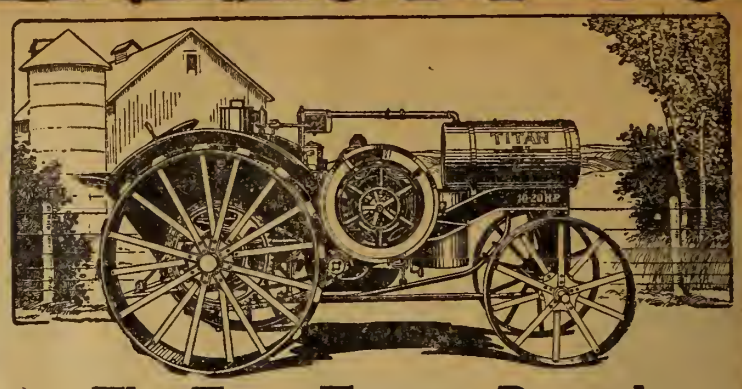
Would like to ask if you know of a cure of a disease among small pigs such as this case? They begin by swelling around the mouth, teeth get black and swelling gets worse until the upper jaw bone seems eaten away. The pigs can't suck and eat but little. They linger on for a week or so and die. When the swelling first starts it looks like it might be a sting or bite of some kind.—L. D. C., Durango, Colo.

The disease in question is necrotic stomatitis or sore mouth in pigs. Examine the mouths of the pigs, scrape out the ulcer cavities and cauterize with lunar caustic. Tincture of iodine should be applied once a day by means of a swab. This treatment requires considerable time, but is necessary if you expect to save your pigs. Where the affection causes large swellings on the outside of the jaws or head, or attacks the stomach and internal organs, the animals should be killed and the carcass destroyed by fire. It is a specific germ disease. The department of pathology at the Agricultural College is experimenting with a vaccine for this condition and will appreciate co-operation of the farmers in trying it out according to directions, but without price.—G. H. Glover, Colorado Agricultural College.

May Be Ropy Milk

Answer to F. B., New Mexico, regarding slimy condition of water after washing separator: Probably the condition you mention is not due to soap or washing powders, as you suggest, but to a bacterial infection of the milk, causing what is known as "ropy or stringy" milk. The milk is safe to use, as the bacteria are not harmful. You should use a disinfectant in the barn as well as in the milk room. Also carefully wash the udders before milking with water into which a little chloride of lime has been put. Sometimes these bacteria reach the milk by means of hay dust. If the slimy condition of the water is caused by the soap or washing powders, stop using them and put some washing soda in the water. If the milk sticking to the separator parts continues to be stringy, you may be sure that the condition is due to bacteria. Clean up the barn, the cow lot and the milk house.

When a man can talk on only one subject he soon lacks opportunities to talk at all.



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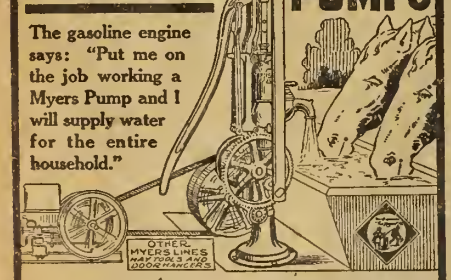

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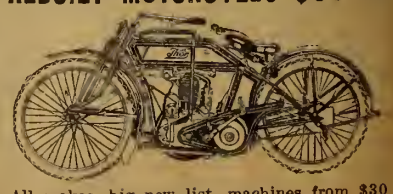

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Dairying and Hog Raising

GEO. E. MORTON

Free advice on the commercial or technical features of dairy farming and hog production. Please address your letters to DAIRY DEPARTMENT, WESTERN FARM LIFE, DENVER, COLO.

WILL HOG RAISING PAY?—The writer today paid for first quality bacon a price of 52 cents per pound with the wrapper weighed in. This is more than double the price of two years ago. The price of hogs on foot has also doubled in that time, but while doubling the retail price means doubling the profits of all who handle the meat from the time the hog is killed, if profits are divided proportionately, the doubled price of hogs on foot does not mean twice the profit to the grower, because feed stuffs, particularly corn and barley, have more than doubled in price. The hog grower has not yet gotten in price for his hogs the full proportion of increase in retail meats. This condition can last only for a time and the price of hogs should advance gradually to make up this difference.

In addition, we have this to consider, that an immense American army is forming. Bacon and beans have always been staple foods for American soldiers, and so far as we know they are likely to continue so. Even with high prices there is likely to be little decrease in bacon consumption by American families. There is absolutely no waste to bacon, and bacon fryings are depended upon in practically every household for daily use in cooking. Some of our older readers who passed thru the period of the Civil War will remember how pork prices soared during that period.

While all predictions at a time such as this are hazardous, I believe I am safe in advising that where a farmer is so situated that he can grow pork during the summer time chiefly on alfalfa and other forage crops, he may look forward without fear to his hogs being one of his best paying crops. Where the hogs must be grown almost wholly upon corn or purchased feed stuffs profits will be more doubtful, because there undoubtedly will be a tremendous demand for most small grains as well as for pork, and direct consumption of as large a proportion of a grain crop as possible is more economical of the nutrients in it than turning it into meat for consumption.

Barley in this country is an exception, because barley is used to a very limited extent for human food in America; and as barley is one of the most advantageous grain crops for a great many sections in this state, Colorado holds a position which should encourage its people in pork production. There is no forage crop which will yield so much pork per acre, considering limited expense of labor upon the crop than alfalfa, and with the combination of alfalfa and barley I believe I am safe in saying that there is no section of our country now in a better position to produce pork at a greater net profit per acre of food than Colorado.

This is not meant to encourage people everywhere in the state to jump into hog growing, particularly this fall. Fall litters and winter grown pigs produce very costly pork and after a thoro trial of both methods, I am satisfied that it is a better paying proposition to farrow only spring litters and turn the sow out on forage with no grain after her litter is weaned. She may be carried without grain by the use of alfalfa hay and root crops well into the winter. She must, of course, be given grain again a couple of months prior to farrowing the next spring, but the cost of keeping her during her non-productive period will have been very little. It is more profitable to keep a larger number of sows for spring farrowing than to depend upon a small number farrowing twice a year. Fall pigs must be grown almost wholly upon grain, and even tho they do not develop well, the cost of 100 pounds gain in live weight is considerably greater than with spring litters. If you plan to grow more hogs, aim to begin by larger farrowing next spring.

Jersey Cattle Club Visitor

Mr. Wallace MacMonnies of the Jersey Cattle Club paid a visit to the state for several days during July. Mr. MacMonnies is field representative of the American Jersey Cattle Club, and upon him devolves the work of putting the club in vital touch with Jersey breeders over the entire country. Mr. MacMonnies has taken hold of this work in splendid shape and has lent encouragement particularly to western breeders who are more scattered and not as well able as are eastern breeders to keep in touch with what is going on in the breeder's world. Mr. MacMonnies visited a number of the leading Jersey herds in the state, among them the herd owned by A. M. McClenahan, Greeley; Bishop Bros.' herd at Virginia Dale; J. D. Pancake's herd at Johnstown, and the Agricultural College herd. Plans are under way to further the interests of the breed more actively in this state, and every breeder in the state will get behind the new propaganda and help Mr. MacMonnies, as well as wish him success.

Holly Dairy Day

As the editor writes this, Holly is holding her annual Dairy Day. It is one of the most successful industrial celebrations in Colorado. A few years ago the farming country around Holly had practically no dairy interest. The increase in dairying in that section is due very largely to the untiring efforts of W. S. Partridge, who made it possible for the farmers to get dairy cows; was instrumental in organizing the Dairy Cow Club, and started Holly Dairy Day. Dozens of others have contributed to the success of these enterprises, but for the consistent, progressive development of an industry in a locality to which it is new, there must be some one person who sees the vision and is willing to put untiring effort into its realization. The writer was unable to be at Holly this year and will miss the event far more than the people there will miss him, but I am sure that the day will be a greater success than in any previous years; and we hope that other communities in the state will take up the idea so well carried out by Johnstown and Holly and see that a real live interest is kept up in the industry which can build the prosperity of a farming community in the shortest possible time.

Dairy News Notes

J. D. Pancake of Johnstown has been fortunate enough to secure for his herd the dam of his herd bull. She is a cow of evident producing ability and a proved breeder of progeny of excellent type. In addition to his herd bull, Mr. Pancake has one of her daughters that is a show heifer.

The directors of the State Dairymen's Association held a meeting the first week in July. This association is the state branch of the National Dairy Council, which has done more on consolidating all the various dairy interests of the country for their good than any other agency in the country. The National Dairy Council, in addition to a country-wide advertisement of the food value of milk and milk products, which resulted in a recognition of the rights of dairymen from the Atlantic to the Pacific by increased prices on retail milk, also led the fight against removing the tax from colored oleo when this was attempted at the last session of Congress. Colorado dairymen can afford to support heartily both the National Dairy Council and their state dairy association.

Colorado dairymen milking Holstein cows should appreciate the fact that a Colorado bred calf from the herd of Dr. Hubert Work of Pueblo sold recently at public auction in Massachusetts for over $5,000, being consigned to the sale by Dr. Work. It is of material advantage to the breed to have a herd with the extreme A. R. O. records of this herd to help pull up production of other herds in the state.

A. M. McClenahan of Greeley reports a very strong demand for Jerseys and has sold a considerable number of females in the last few months. Jersey business in general is picking up.

A new Guernsey herd has started upon Advanced Registry testing. J. W. Purvis (Elwell), Johnstown, has two cows on test. H. D. Parker of Greeley was the pioneer on Advanced Registry testing for Guernseys in this state, and we are glad to add another herd to the list.

The Colorado Milk Producers at a recent directors' meeting laid plans to continue their campaign for the betterment of milk market conditions. Professor Morton, the state dairy commissioner, was in session with them and outlined what had been done in the state in the way of checking cream tests. The Milk Producers are particularly anxious at present to check whole milk tests, and in order to get results along this line it was recommended by the Dairy Commission that dairymen selling whole milk sell only to firms who will agree to give them a daily test upon their milk. At present, firms purchasing whole milk are in the habit of taking composite samples over a period of two weeks, and in order to check such tests, it would be necessary for a man from the dairy commissioner's office to remain on the ground two weeks checking the milk from one herd. This is impracticable because it is so wasteful of time with the amount of work demanding attention in the state. Cream tests have been checked very successfully and cases have been filed, upon which the district attorney's office of Denver county has agreed to make prosecutions as soon as the court docket is cleared somewhat in the fall. Whole milk tests can be checked just as successfully if a daily test on the milk is demanded by the producer.

The city of Boulder at last has a real milk inspection by a man who knows what cleanliness is in dairying and who knows enough about the dairy business so that unnecessary hardships will not be imposed upon the dairymen selling in Boulder. F. B. Schroeder has been appointed milk inspector. He has the confidence both of the city and the dairymen, a fact which augurs well for his success.

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For the Prevention of Blackleg in calves and young cattle

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Use any Injector, but Cutter's simplest and strongest.
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Cutter's Pill Injector.... 1.50
Insist on Cutter's. If unobtainable, order direct.
Write for new booklet, "The Control of Blackleg." It tells about Anti-Blackleg Serum which cures Blackleg and may be used simultaneously with vaccine to combat outbreaks and safely protect valuable stock.
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More than 100,000 New Butterfly Separators now in use

Galloway's Complete Pumping Outfit
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Don't wear yourself out in hot blistering weather pumping water. Don't depend on windmills. They are unreliable and risky. Let this wonderful Galloway complete pumping outfit do this hard work giving water when you need it. The engine is the famous Galloway 2¼ horse-power water cooled stationary. Pump Jack is extra powerful, double geared—designed especially for deep wells. Strong 16 ft. of Drive Belt. Everything complete already to hitch to pump. Besides pumping, engine will run washer, churn, cream separator, grind feed and saw wood. Simple—easy to operate.
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Send for our literature on our new steel Churns. Absolutely sanitary, easy to clean, made of seamless heavy steel. will last a life time.
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Write today for measurement blank
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$16.50 Swap Feed Grinder. | $21.00 Galvanized Steel Wind Mill.
We manufacture all sizes and styles. It will pay you to investigate. Write for catalog and price list.
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The Farm Home

MRS. H. T. FRENCH

Questions about home problems promptly answered by letter and thru the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

AUGUST

A sultry season—roses droop—
Scarlet blows grow flaunting,
Flashing glances at the sun,
Scornful, nothing daunting!
Breathless airs sleep in the trees,
Birds are softly lilting—
On each side the country road
New mown weeds are wilting.
Rhythmic scythes are making hay,
Sweetly smells the clover—
As each deftly wielded fork
Turns it lightly over.
Goldenrod shakes out is plumes,
Corn's unfurling finely—
Peaches ripen lusciously,
Apples flush divinely.
Hammocks swing in shady nooks—
There enchantment hovers—
August even's not too warm
For enraptured lovers!
While they rock some ravished bird
Sings love's sweet old story:
Surely August weather brings
Bliss, tho transitory,
Souled to live within the heart
Tenderly, forever—
Days of such felicity
Are forgotten—never!

—Mary Virginia Agnew.

Getting Into the Game

There no longer exists any doubt in the minds of loyal citizens as to the necessity of every man, woman and child getting head, heart and hand interested in the great work of conserving our food. Many of our rural people have, during the past few weeks, attended one or more farmer's picnics and heard from the lips of earnest and sincere speakers the words of appeal to our American people, that they lay aside all superficial and vain efforts and unite as never before in home, community, state and nation to build up the really substantial life in which all must take a part, thus helping to win the war.

Read in the current magazines, cooperating in this national campaign for increased food production, the article by Carl Vrooman entitled, "We're All in the Same Boat."

We know that the readers of Western Farm Life are more than willing to do their bit and we also feel that thru the home department we may be of such mutual service as every woman is most desirous to be. Too busy in our gardens and kitchens to feel tired; but after each night's refreshing sleep at the close of a day well spent, we rise early and with the plan for the day well in hand we are realizing the joy of true living better than ever before.

Bulletins and pamphlets from the Extension Service of the State Agricultural colleges are being sent to all who ask for them, and from the same helpful sources are coming into our homes and communities those who assist in the organizing of boys and girls clubs, mother and daughter clubs, and all other clubs, that this great work may be most effective. Everybody busy, everybody happy, with no fear of not having enough to do.

Two calls have come to the editor of this department since she sat at her desk to write to her little circle of readers and both were from communities anxious to start plans for work that will link more closely the work of home and school. Both parents and teachers must emphasize the training that best fits the children for life work. Many boys and girls are saving their households $60 to $130 per year with their canned products and the 4H Brand beats the factory canned products. There is no greater accomplishment than to be able to can vegetables and fruits successfully—a kind of education that helps to produce health and contentment and home comforts, yet the young are entitled to an all-round education and this will be a good time to consider the thots of an eminent physician whom I once heard say: "Cease goading the children into the utmost haste in their education. Repress in our youth the inordinate desire for wealth and vain show. Remind them that he who hasteth to be rich more frequently cometh to poverty and that 'Pride goeth before destruction and a haughty spirit before a fall.' Teach them that they are most happy who contribute most to the happiness of others and thereby diminish the domination of human selfishness. Seek to impart confidence and hope to those who worry. Hope is not only an anchor to the soul, but when united with confident expectation, it is the most efficient tonic for invigorating all the functions of the body."

The authority quoted cannot be gainsaid and the truth given should serve as seed thoughts to check undue ambition for the children given to our keeping and guidance. Knowing the effects of worry, shall our pride continue to cultivate it, or shall we become a law unto ourselves to "Cease goading the children" to the destruction of health and the shortening of life?

Linking the Home and the School

There is no better way of connecting up the every-day affairs of the home with the school than one teacher in a rural school in Oregon did when a few years ago she gave credits as follows for home work: Building fire in the morning, 5 min.; milking cow in morning, 5 min.; cleaning out barn, 10 min.; splitting and carrying in wood (12 hrs. supply), 10 min.; turning cream separator, 10 min.; cleaning horse (each horse), 10 min.; gathering eggs, 10 min.; feeding chickens, 5 min.; feeding pigs, 5 min.; feeding horse, 5 min.; churning butter, 10 min.; making butter, 10 min.; blacking or cleaning stove, 5 min.; making and baking bread, 1 hour; making biscuits, 10 min.; preparing the breakfast for family, 30 min.; preparing supper for family, 30 min.; washing and wiping dishes (one meal), 15 min.; sweeping floor, 5 min.; dusting furniture (rugs, etc., 1 room), 5 min.; scrubbing floor, 20 min.; making beds (must be made after school), each bed 5 min.; washing, ironing and starching own clothes that are worn at school (each week), 2 hours; bathing each bath), 30 min.; arriving at school with clean hands, face, teeth and nails, and with hair combed, 10 min.; practicing music lessons for 30 min.), 10 min.; retiring at or before 9 o'clock, 5 min.; bathing and dressing baby, 10 min. Other credits are also given so that the daily routine of home duties is fully recognized.

INSTRUCTIONS INTENDED TO BE HUNG IN EVERY AMERICAN KITCHEN:

General Food Rules

Buy less, serve smaller portions.

Preach the "Gospel of the Clean Plate."

Don't eat a fourth meal.

Don't limit the plain food of growing children.

Watch out for the wastes in the community.

Full garbage pail in America means empty dinner pails in America and Europe.

If the more fortunate of our people will avoid waste and eat no more than they need, the high cost of living problem of the less fortunate will be solved.

The above "Home Card" issued by the Committee on Public Information at Washington, D. C., constitutes the cardinal principles of the food campaign and over the name of Herbert Hoover, the U. S. Food Commissioner in the Official Bulletin are written the full content of the pledges. Every housewife should write for a card.

Kill All Flies! They Spread Disease

Placed anywhere, Daisy Fly Killer attracts and kills all flies. Neat, clean, ornamental, convenient, and cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Ask for

Daisy Fly Killer

Sold by dealers, or 6 sent by express, prepaid, $1.00.

HAROLD SOMERS, 150 DeKalb Ave., Brooklyn, N.Y.

Timely Work

Thus far we have taken care of rhubarb, spinach, peas, strawberries, and been very busy looking after our kitchen, gardens and daily meals. It is a temptation to the editor to speak of how to get rest and recreation apart from these pressing duties, but being quite sure that most of us must find our greatest pleasure in the doing, and our rest in the thot of true and lasting service rendered, I shall only make a few suggestions that will help every day right at home.

Short Cake Recipe

Tho the strawberry season is over, every housewife knows that many other berries and fruits make quite as delicious a shortcake as do strawberries. The following is always good: 2 cups flour, 3 teaspoons baking powder, 1 teaspoon salt, 2 tablespoons sugar, sifted together. Put in measuring cup 2 tablespoons melted butter or lard, 1 egg, fill cup with milk, pour in dry mixture, add ¼ cup of milk extra and stir all together, beating well. This same recipe is fine for muffins.

Spiced Cherries

Seven pounds of sour cherries, 5 pounds brown sugar, 3 tablespoons cinnamon, 3 tablespoons cloves, 1 pint vinegar. Wash cherries and remove stems, but do not pit unless preferred. Put into kettle, add sugar, vinegar and spices tied in a piece of muslin. Heat to boiling point and cook slowly one and one-half hours. Put into jars.

Sweet Pickled Peach

Four quarts peaches, 2 pounds brown sugar, 1 pint vinegar, 1 ounce stick cinnamon, whole cloves. Boil sugar, vinegar, cinnamon 20 minutes. Stick each peeled peach with 4 cloves. Put into syrup, a few at a time, and cook until soft. Keep in stone crock.

Note: If you have not already done so, send at once to the State Agricultural College, Extension Service, for Farmers' Bulletin No. 841 on Drying Fruits and Vegetables in the Home, with recipes for cooking.

For Those in the Field

Whether man or woman engaged in the field during the long hot days of August, a good cool drink of some sort will be appreciated, say about 10:30 o'clock in the forenoon and about 4 o'clock in the evening. All who have tried this little thot for those thus engaged, or have received such thotful attention, can testify to the beneficial effect and of how much easier the task is met. Save all extra juices when canning fruit, or that left over from a serving, thus having on hand juices of orange, lemon, pineapple, cherry, peach, apple or grape and currant. Put into pitchers or pails as many pints of water as there are men and women in the field; allow 2 tablespoons of juice and 1 teaspoon of sugar to each person, being careful not to make the drink too sweet, as too sweet a beverage fails to quench thirst. Use water as cold as can be procured. Take well made sandwiches (two to a person) along with this drink, and the writer has gone so far as to take a pan of baked beans or a pail of buttermilk, or iced tea to the field or garden as often as twice morning and afternoon if the day were unusually hot and the work to be hurried.

To a quart of cold water add 1 cup of sugar and ½ pound chopped ginger; boil for 15 minutes. Add ½ cup each of orange, lemon and cherry juice. Cool and strain. When needed add 1 or 2 quarts of water, as desired.

The Origin of the Sandwich

Nearly a hundred and fifty years ago the Earl of Sandwich lived a very gay and merry life on his English domain. He was a notorious gambler and was so attached to the peculiar sport that he would not even leave a gaming table to step out and get his meals, but would bring with him slives of bread with meat between them to munch on when he became hungry. His example was soon followed by others, who had lunches prepared for them in the same way, and they became known as "sandwiches."

PATTERN DEPARTMENT

All Patterns 10c each. Address WESTERN FARM LIFE, Pattern Department, Fourteenth and Arapahoe, Denver, Colo.

2152—Waist. Cut in sizes 34, 36, 38, 40, 42 and 44 inches bust measure. **2153—Skirt.** Cut in sizes 22, 24, 26, 28, 30 and 32 inches waist measure. For the development of this attractive frock one could have bordered goods, or shantung in contrasting colors. Organdy and gingham would be a very attractive combination. It will require 6½ yards of 44-inch material to make the entire dress for medium size. This illustration calls for TWO separate patterns, which will be mailed to any address on receipt of 10c for each pattern.

2142—Simple Summer Gown. Cut in sizes 16, 18 and 20 years. Requires 6⅜ yards 36-inch material for 18-year size. Foulard, combined with organdy, lawn or dimity would be nice for this style. The skirt may be made without the ruffle heading. The sleeve is new and novel. This style is also nice for shantung, crepe, novelty silk, challie, batiste, voile, bordered and embroidered materials.

2139—Practical and Comfortable First Set of Short Clothes. Cut in sizes 1, 2, 3, 4 and 5 years. Lawn, cambric, batiste, dimity or crepe, silk or challie, cashmere or gabardine could be used for the dress, while cambric, crepe or lawn are nice for dress and slip. Any desired trimming may be employed. The dress is in bishop style, with a comfortable raglan sleeve. The slip fastens on the shoulder, a style especially good for young children. The drawers may be in knickerbocker style or with straight lower edge and tucks.

2137—Smart Little Dress for Mother's Girl. Cut in sizes 4, 6, 8 and 10 years. Requires 3¾ yards 36-inch material for 8-year size. This model is lovely for the new summer cottons and linens. It is also good for soft woolens, crepe, gabardine and silk. The sleeve may be finished in wrist or elbow length.

2136—Neat and Becoming House Dress. Cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Requires 7 yards 36-inch material for 36-inch size. In seersucker, gingham, linen, percale, drill or lawn, this design will be very attractive. It is also nice for wool fabrics, for tub silk, challie, crepe and serge.

1977—Smart and Practical Apron. Cut in sizes 34, 38, 42 and 46 inches bust measure. Requires 7¼ yards 36-inch material for 38-inch size. This style is especially nice for gingham, percale, alpaca and brilliantine. The front is cut in panel shape, to form deep pocket sections over the side fronts.

1742—Comfortable and Attractive Jumper Dress. Cut in sizes 4, 6, 8, 10 and 12 years. Requires 1¾ yards 27-inch material for the guimpe and 2⅝ yards 36-inch material for the dress for 8-year size. This is a lovely model for summer fabrics and its lines are so comfortable and simple. For wash fabrics it is especially attractive. With a guimpe of dotted Swiss or batiste, and the jumper of linen, poplin or repp, it would be a serviceable dress. It cculd be made of taffeta or challie with pipings of contrasting materials and a guimpe of crepe or lawn.

2150—Simple Negligee. Cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Requires 4 yards 36-inch material for 36-inch size. Suitable for lawn, dimity, batiste, poplin, cambric, percale, silk, washable satin, pique and linen. The garment is loose fitting; the fullness is held at the waist line by a belt or ribbon girdle.

Why the Invention Failed

"What did you say Professor Dippy's latest invention was?"

"A muzzle for bumble-bees."

"But they don't sting from that end."

"So he found out when he attempted to muzzle them."—Judge.

Profitable Farm Poultry

W. E. VAPLON

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries Poultry Department, Western Farm Life, Denver, Colorado.

"A bird in the hand is worth two in the bush." Here are five reasons for selling chickens now:

1. The pullets need the room for proper development.
2. Crowded quarters will mean roup and other evils very soon.
3. You cannot make anything on your investment with feed at present prices, on stuff that must go to market sooner or later anyhow.
4. The price of broilers is good now. The price of roasters when the present chicks are twice as large, will be about one-half what it is now.
5. More or less of the chicks now ready for market will be a total loss. Varmints, hail storms, twenty-seven or more accidents will take them.

Think over the above five points; look over your accounts of the past few years (you shoud have kept books), and figure out how much you make (or lose) by holding young stock until fall.

Don't forget the hens; the next two months will show an egg yield of half or less than half of the past two months. On account of room, prices and feed, as fast as hens go into the molt and quit laying, they should go to market, unless they are worth keeping thru several months of idleness.

Lice and Mites

Whenever you see a young chick with wings hanging down, slouching around like a young chap who has just been turned down by his best girl, look for lice on the body of the chick. Hot weather and the usual rush of work are good friends of insect pests. Right now is a good time to SOAK the hen house and brood coops with some preparation like zenoleum, creolin, etc. (directions on the cans). Nests should be removed and sprayed; every crack and crevice should be filled with a strong solution. Another spraying in a couple of weeks will put things in good shape for the season.

Range and shade, plus milk and clean water, will do more to put your early pullets into laying condition than a half dozen balanced ration formulas. It will pay to give the poultry a little extra care in spite of busy times.

Feed and Water

Feed for growing chicks may be divided into three classes—grain feed, dry mash and green feed.

In addition to the grain feed that the chicks are likely to find when on free range, a grain mixture should be given them morning and evening. The following rations should produce good results:

Equal parts of cracked corn and wheat. As the chicks increase in size, oats may be added. To cheapen this ration, it may be changed to two parts cracked corn and one part wheat. When one part of oats is added to this mixture, as the chicks increase in size, the ration may be changed to three parts cracked corn, one part wheat and one part oats.

In addition to the above feed, a dry mash should be fed in a hopper to which the chicks have access at all times. The following mixtures are suggested:

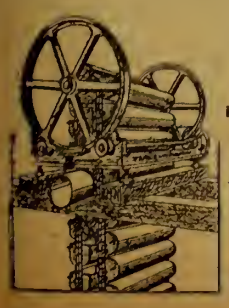
Two pounds cornmeal, 1 pound middlings, 4 pounds oatmeal, 2 pounds wheat bran, 2½ pounds beef scrap.

Two pounds cornmeal, 1 pound middlings, 2 pounds wheat bran, 2½ pounds beef scrap.

Three pounds wheat bran, 3 pounds middlings, 3 pounds cornmeal, 1 pound crushed oats, 1½ pound beef scrap.

If a continued supply of sour milk can be obtained it may be fed separately in a pan provided for the purpose and the beef scrap in the above rations reduced one-half. Sour and sweet milk should not be fed alternately, as such practice is likely to cause bowel trouble. Whenever it is possible, growing chicks should be allowed free range so they may obtain as much natural green feed as they need in addition to bugs and worms. When green feed cannot be obtained on range such feed as sprouted oats, cut clover, mangel-wurzel, beets, etc., should be fed daily.

The importance of clean, fresh water for chicks cannot be overemphasized. In very hot weather fresh water should be given to them twice a day. Whenever possible, the pan of water should be placed in the shade to keep cool. The water pan should be cleaned every day before fresh water is added.



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50% Less Power

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The Famous Water Elevator Company

1410 Stout St. Denver, Colorado

Recommend 36 Year Limit

The Federal Farm Loan Board has recommended that all of the federal land banks limit their mortgages, so far as possible, to 36 years. Under the law, mortgages are permitted to run from 5 to 40 years at the option of the borrower, but the 36 year maximum has been recommended by the board because it will greatly simplify the keeping of records.

A mortgage given for 36 years at 5 per cent may be wiped out during that length of time by annual payments equal to 6 per cent of the principal. The average interest rate on farm mortgages thruout the United States, under the old regime, has been 7.4 per cent. That rate was for interest alone. At the expiration of those mortgages the entire principal fell due.

Under the Farm Loan Act, annual payments of only 6 per cent will take care of both the interest and principal and the borrower will never have his mortgage fall due, and never be compelled to meet any payment in excess of 6 per cent of the principal.

The Federal Farm Loan Board has also recommended that these amortization payments be made semi-annually, which means that 3 per cent on the principal will be paid every six months.

The minimum loan granted under the Farm Loan Act is $100. To retire a mortgage of $100 in 36 years the borrower would make semi-annual payments of $3 each. With that as a basis any borrower or prospective borrower in the United States is able to compute his semi-annual payment on a mortgage of any size up to $10,000, the maximum permitted under the act. For instance: If the proposed loan should be for $1,500, the borrower would simply divide $1,500 by 100. The result would be 15. He would then multiply 15 by $3. The result would be $45 as the semi-annual payment to retire, interest and principal, a 36-year mortgage of $1,500 at 5 per cent.

It should be borne in mind that any borrower under this act is permitted to pay off all or any part of his mortgage after it has run five years. So the borrower who takes his mortgage for 36 years gets the benefit of smaller payments during the first five years and then has the privilege, after five years, of paying all or any part of it in amounts of $25 up on any interest paying date.

Dairy Farming Pays on $200 Land

Continued From Page 3

two farms bear the names of the brands of milk evaporated at the Johnstown condensery.

On the W. A. Purvis farm we looked thru a barn that accommodates 52 head of Holsteins when the herd is full, but a recent sale took a bunch to the new dairy district at La Junta.

On the farm of C. H. McNeil and son we had a chance to look over 54 head, which were just being driven in from the pasture. They made a fine showing. Mr. McNeil is milking 39 head and his checks for May amounted to $370, while the June milk receipts were estimated at $450, the month being still unfinished. This farm has, in addition, its full acreage of sugar beets and other cash crops, as well as ample alfalfa.

(Cuts on the cover of this issue are from photos taken on the farms of C. H. McNeil and Ralph Harris.)

Some of the old-time beef men have become dairy farmers, because they realize there is more money in it, especially since the range has disappeared. One of these is J. W. Whowell, owner of Virginia Lynn farm, who was known for years as a beef man. He now owns a fine herd of Holsteins and there isn't a beef cow on the place.

On the farm of J. W. Purvis and son we saw a fine Guernsey herd, one grade animal of which gave the owners $1 a day profit for a period of a month.

On the J. W. Pancake farm there was a Jersey herd that showed evidences of good blood, with an exceptionally fine sire. At Howard Kennedy's we admired the Guernseys, purebreds and grades; at Griffith's there were Holsteins, and the same breed at the S. A. Gray ranch.

The condensery has been in operation seven years and the road was difficult at first. When the enthusiasm of the original boosters wore off, and before the new dairy farmers had really learned how to get the best out of their herds, milk offerings dropped down to almost nothing. However, the tide turned as soon as the farmers saw the money steadily going to the men who stuck to the cows, and now everybody realizes what the cows mean to the Johnstown district.

Corn is the principal silage crop; barley is grown as a grain feed and there is alfalfa everywhere. Beet tops are fed as hay during the fall. There are some 50 or 60 silos in the district and about 30 farmers are using milking machines.

The average sum distributed among farmers in the Johnstown district by the condensery has been about $150,000 a year, but at present prices this sum will be exceeded in 1917. For June alone the two condenseries at Johnstown and Fort Lupton paid out $39,000, deliveries of milk aggregating 70,000 pounds a day. The price to the farmers was $2.24 per hundred for 4 per cent milk.

FREE WAR ATLAS OF THE WORLD'S GREATEST WAR

THE preparation of this book atlas was a work of many months. It is all of an atlas and more than an atlas at the same time. It is a reference book that belongs in every home. It is necessary to the man who thinks. It is appealing to the woman who thinks. It is educational to the children who are growing up. Contains 32 pages of authentic maps, of vital facts and most invaluable pictures.

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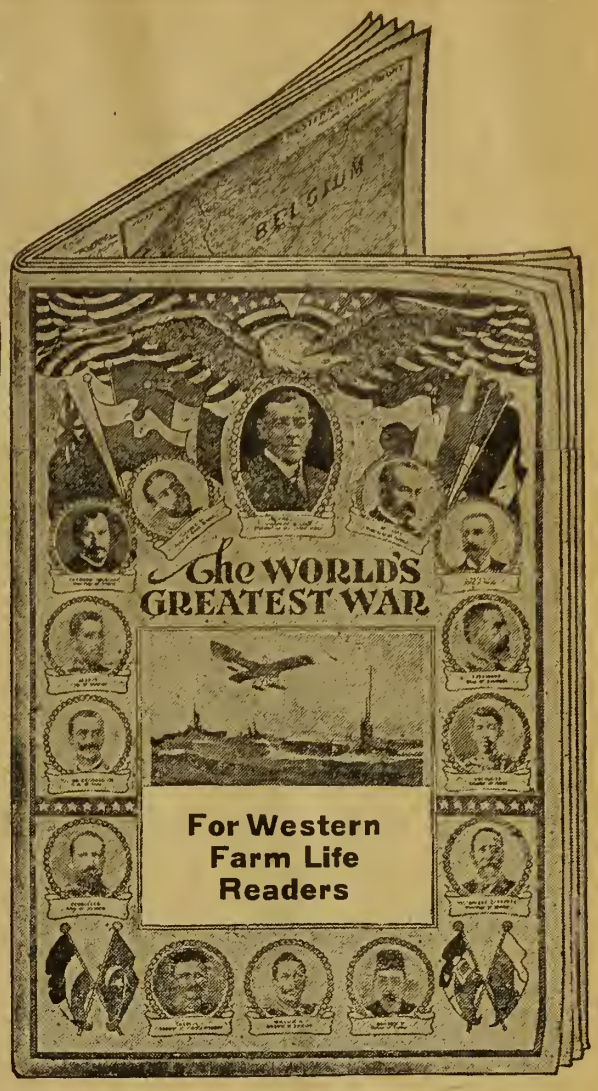

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THIS ATLAS SENT FREE, postage prepaid, with your one-year renewal subscription to Western Farm Life at $1.00.

BUT YOU MUST HURRY if you want one of these atlases. We were only able to secure a limited number at this time and cannot guarantee to furnish them indefinitely, so get your order to us as soon as you can.

WESTERN FARM LIFE, DENVER, COLORADO

A Minimum Wheat Price

President Henry Jackson Waters of Kansas State Agricultural College is urging the fixing of a minimum price on wheat for the 1918 crop, so that farmers may be protected against a decline in case the war should end before next year's crop is sold. Following is a copy of a telegram sent by Dr. Waters to Senator Gore, chairman of the senate committee on agriculture:

"Because of high-priced seed, labor and machinery, farmers hesitate to sow even normal wheat acreage unless they are protected against disastrous decline in prices if war ends before crop is sold. They consider $2 at their station, or $2.25 at Chicago as a reasonable minimum price. This is about equivalent to $1.75 last year and perhaps more than $1.25 at their station two years ago. An accurate survey shows that Kansas farmers will sow 1,000,000 acres less than last year unless a reasonable minimum price is fixed soon. Preparation of land and arrangements for seed must be made now. Comparison is frequently made between wheat prices here and in Europe. Wages, rents, machinery and standards of living are higher than there. It is as fair to try to base American wages on European wages as to attempt to base our wheat prices on European prices."

Adam Exonerated

The minister was preaching on little things, how great events from trifling causes spring, and an obiter dictum was—"Did you ever reflect that a single man was the father of the human race?" Several members of the congregation subsequently assured each other that they regarded Adam as married.—Manchester Guardian.

Livestock

Because of the high price of corn the shortage of cattle and hogs on all markets will be more acute during late summer and fall than for many years. This is the opinion of men who have watched the markets and who are familiar with the pork and beef supply. This condition in the corn belt states indicates that the mountain states farmer who sticks to livestock will make big money. Alfalfa, beet pulp, barley, field peas and the high altitude corn of the plains should go into beef and pork. Meat making should become the business of every farmer in the irrigated and dry land sections of the west this fall. Everything points to the highest prices in half a century, with good profits going to the producer who has wisely grown a supply of feeds. Short grain yields can often be turned to better account when made into meat than if sold for cash.

Preparing Calves for Show

The small beef breeder will usually find it best to give chief attention to young cattle, particularly calves, in exhibiting at local fairs. Often the exhibitor wishes to sell the calves, and those which are gentle and well trained are more salable than are the wild ones. The calves selected should be about as old as the fair classification permits.

It is not possible to train calves for the showing in a few days. This work should really begin before the calf is a week old. It is easier to handle the calves then and the excitement of wild chases and exertion that is detrimental toward putting on flesh is avoided. Calves that are to be shown should not be allowed to follow the dams in the pasture. It is better to give them the protection of a darkened sanitary shed during the hot summer months when the flies are bad, turning the cows in twice a day to be nursed. However, they should have access to a pasture at night.

Nothing will take the place of plenty of milk to put the calf in show form. It is never advisable to wean a calf, that is to be shown, before it is eight months old, and it is often more profitable to either let them nurse the cow or provide milk for them until they are 12 months old.

A ration of hay and grain should be supplied to supplement the milk. In fact, they should have access to choice hay or pasture from birth on until showtime. The ration of grain should be supplied when they are two months old. A mixture of two pounds of shelled corn to one of whole oats is satisfactory. After the calf is six months old, one pound of old-process linseed oil cake to eight pounds of corn and oats can be fed advantageously. Grinding the corn and oats will help after the calf is eight or ten months old.

Proper selection, careful training and regularity in feeding are essential to the best results in showing calves.—H. O. Allison, Missouri College of Agriculture.

Brands 800 Herefords Annually

E. D. Gould of Kearney, Neb., accounted the second largest feeder of livestock in the United States, had ten loads of steers on the Chicago market recently, from his feed lots at Arnold, Neb. The Gould feeding operations are conducted at eight different places and include 20,000 acres of grazing and farming land in Western Nebraska. While Mr. Gould purchases many of the cattle that he feeds annually, he brands 800 Herefords of his own raising every year. He keeps a number of registered Hereford bulls and a herd of high-grade Whiteface cows at all times.

Seventy hogs marketed at Denver recently by the J. O. D. Ranch Co. of Aroyo, Colo., brot $15.36. They averaged 241 pounds and were in prime condition and of desirable market weight and quality.

How to Cure Bloating

Bloating is usually caused by animals feeding on green feed, such as clover, alfalfa and green corn, that ferment readily. The consumption of spoiled feeds, such as potatoes and beets, may cause it. Sudden changes in the feed, inflammation of the rumen, and a weak peristaltic movement of the paunch resulting from disease or insufficient nourishment are frequent causes. The paunch or rumen occupies the left side of the abdominal cavity, hence the distension of the abdominal wall by the collecting of gas in the rumen occurs principally on the left side. The gas forms quickly and the distended wall is highly elastic.

The animal stops eating and ruminating, the ears droop, and the back may become arched. In the more severe cases the walls of the abdomen are distended on both sides, the respiration is quickened, the pulse small and quick, the eyes are prominent, and the mucous membrane congested — these are the usual symptoms. Death results from asphyxia, caused by the distended paunch interfering with the movement of the lungs. The treatment is both preventive and medicinal.

This form of acute indigestion can be largely prevented by practicing preventive measures. All changes of feed should be gradual, especially if the ration fed is heavy, or the new ration consists largely of green, succulent feed. Cattle pasturing on green clover or alfalfa should be kept under close observation. It is not advisable to pasture cattle on clover or alfalfa which is wet with rain or dew.

Bloating usually can be quickly relieved by puncturing the wall of the paunch with the trocar and canula. The operation is simple and generally is not followed by unfavorable results. The instrument is plunged thru the walls of the flank on the left side, midway between the border of the last rib and the point of the paunch.

The trocar is then withdrawn from the canula. After the gas has escaped thru the canula, the trocar is replaced and the instrument is removed. The instrument should be thoroly boiled after being used, and kept clean until again needed.

In bad cases it may be necessary to remove part of the food thru an opening made in the side. This will require the services of a veterinarian.

It is advisable to wash the skin with some good antiseptic before inserting the instrument. In bad cases it is sometimes well to give the cow a dose of Epsom or Glauber's salts dissolved in plenty of water. One should add two to four ounces of turpentine, or three or four teaspoonfuls of charcoal. This will absorb the gases accumulating in the paunch.—Dr. J. H. Burt, Veterinary Department, Kansas State Agricultural College.

Home Made Bean Harvester

An economical way of harvesting beans has been found in the irrigation district of the Arkansas valley in Colorado. The process of harvesting the beans, which formerly was often done by hand, is now being done with a home-made machine that is said to be very inexpensive, and it seems to do the work well.

Two long knives are bolted to 2 x 6's hard pine; the pine lumber braced crosswise and put together close enough so as to fit between the rows of beans instead of the width of corn rows, like the old-fashioned corn-sled. The width of the harvester is most of the difference between the construction of this implement and the old corn-sled. In fact, some of the bean growers have narrowed the old corn-sled to fit the bean rows.

When the beans are ready to harvest, if well cultivated, the ground between the rows is a little lower than the rows. This allows the knives to go under the ground and come in contact with the roots of the bean, which is comparatively tender, while the stalk above the ground is hard and tough. However, the knives must be sharp and well slanted to do a good clean job of cutting the beans. The cost of the material in the bean harvester, where the work is done at home (except the knives) is about $10. One good horse will pull the harvester with ease, if it is not set too deep in the ground.

After cutting, the beans may be raked with a hay-rake, but if very ripe it should be done in the morning while the dew is on and the pod is tough, so they will not shell and waste. The crop may be handled then like a hay crop in stacking. The old way was pulling the beans by hand and was an expensive way where there was a considerable acreage. Now that seed houses have come to the farmer with a contract to pay a certain price per pound for the beans at harvest time, more acres are planted and a less expensive way is sought to grow and harvest a very profitable crop, if it can be raised cheaply.—J. E. Mumford, Cheraw, Colo.

Watch Hay and Grain

Do not store damp grain or hay unless you have adequate facilities for frequent "turning," otherwise they are likely to go out of condition. Few farmers realize how small a per cent of moisture will cause otherwise good grain or hay to heat and deteriorate.

Never bale damp hay.

If your grain contains a large per cent of foreign material, clean it. It keeps better.

Feed low grades and screenings on the farm.

Do not mix varieties. In most cases it can be avoided. It nearly always causes the commodity you are selling to grade low.

Seed Grain Supply

While it appears that there will be plenty of good seed winter wheat, seed winter rye and seed of other fall-sown crops if the available supply is properly distributed, everyone who is contemplating sowing an acreage of any of these crops this fall should provide for his seed supply as soon as possible. It will be necessary to ship seed wheat into those sections where the wheat winter-killed badly. In other sections which produced a good crop ,the best of that crop should be conserved either on the farms or in country elevators to meet the local and distant demands for seed purposes. If this precaution is taken there will be no need of sowing wheat, procured at the last minute, which, tho of commercial value for milling, feeding or other industrial purposes, is unfit for use as seed.

Bound to Keep Peace

"Deed no, sah. I can't jine no army."

"But your country needs you, Rastus."

"Can't help dat. It's onpossible."

"Why impossible, Rastus?"

"Well, you see, my o' woman has been ovah to de police co't an' put me unner bonds to keep de peace. No, sah, I can't do no fighting, nohow."

Attention Western Farmers and Dairymen

Acclimated Holsteins and Percherons

WHICH WILL BE YOUR CHOICE?

Buy your Holsteins and Percheron Horses AT HOME. Colorado Acclimated.

or send East and get stock that you will have to acclimate before they do you any good, and in most cases pay a great deal more money for them in the end?

Write us today—get our prices and guarantees.

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Denver is the Highest Market **Most of the Time** and the Best Market **All the Time** for Western Cattle and Sheep.

Time and again cattle have sold on the Denver market for higher prices than the same cattle would bring same days at the Missouri River.

Why don't you market your cattle and sheep at Denver, where they will bring you greatest net returns?

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In Durocs, have a litter (13) out of a daughter of Model Critic, by a son of Grand Model, that are good.

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I have the largest 6-year-old jack west of the Missouri River for sale. Other bargains in Mammoth jacks and jennets.
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The Grange

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The Grange should mean a community home; the organization around which the life of the community may gather. This is the ideal impressed upon Colorado audiences of Grangers during the week of July 9th by John C. Kotcham, Master of the Michigan State Grange, who was the chief speaker at picnics held near Akron and at Keota, Fort Collins, Teller's Grove in Boulder county, Kiowa, Golden and at Glendale Grange, near Denver. Mr. Ketcham is an eloquent and forceful speaker and his addresses will have a wonderful effect on Grange interest and enthusiasm for months to come. He was accompanied on his tour of the state by State Master John Morris, to whom the visitor paid a high compliment, declaring that Master Morris had always been found standing for the highest and best in his voice and vote at National Grange meetings. It was the Michigan Master's second visit to Colorado, and he felt complimented by the return call. Our state officers assured the visitor that the pleasure was all ours and that the second request was due to the impression made on the previous visit, when his talks proved a source of inspiration that was reflected in Grange activities for a long time.

Master Ketcham spoke of the waning home influence; of the lure of the industrial centers that draws the youth from the farm, and of how the Grange should step in and fill the want for mental and moral improvement; for educational and uplifting entertainment and amusement, the lack of which causes many a young person to leave the rural districts. He said his ideal of a Grange meeting was not one continual round of amusements, winding up with "shaking your feet," as he expressed it. He had no particular objection to "shaking the feet," tho he did not indulge in the practice himself, but he wanted to impress upon Grangers the fact that a little development "up here"—pointing to his head—was more essential than foot development. He spoke for a well-rounded character development and high ideals. Put away your prejudices, was his advice; quit petty bickerings and quarreling; exert the community voice in matters of legislation; have something to say about the prices you get for your produce.

He declared that Congress numbered in its membership 58 per cent of lawyers, who as a profession, constitute one-half of one per cent of the total population of the United States, and that the farmers, numbering 33 per cent of the total population, had in Congress a representation constituting one per cent of the population. His plea was for greater representation of farmers in national and state legislatures. On the marketing question he made the point that the farmer should put his products on the market on the same footing with the manufacturer. The latter knows the items entering into cost of production. He adds to that a profit and says the manufactured article is worth "so much." The farmer is in the habit of letting the middleman tell him what his product is worth and he must take the price fixed for him by someone who has no share in production.

Both from the social and business standpoint, said the speaker, the Grange should be of service to its members, and it can only reach this ideal if every Granger does his share in making the organization a success. (—A. T. S.)

About Udder Troubles

Dr. L. S. Dijkstra

Among the difficult farm problems, the keeping of the cow's udder in a continual good condition may be considered an important one. Udder troubles are of frequent occurrence, among the chief complaints that might be mentioned being Calf Congestion or Hormonia.

It will often occur that heavy milk producers, just before or after freshening, have a big, rather hard bag, which is in general a harmless natural condition of the bag, and which condition disappears of itself in a few days if the proper care is taken. It will be well to give such cows in the first few days a protein-poor, laxative feed; bathe the udder if very hard from time to time with hot water; milk three or four times a day and massage the udder well at each milking, using a little lard or vaseline as ointment. Drafts, cold concrete stalls and wet grounds should be carefully watched, of course. In order to keep the bowels active, give twice a day half a pound of Epsom salts at intervals of three days, and daily a small cupful of molasses. It should be borne in mind that while we live in a time that one is prone to attribute everything to the working of bacteria, this hardness of the bag has nothing to do with bacteria, but is caused by specific ferments in the blood, so called "hormons," which are separated from the genital organs shortly before freshening and the secretion of which will greatly be promoted by giving the cow a good rest before freshening and good feeding.

Traumatic or Wound Udder Inflammation

This may be due to injury of the bag and teats by horning or stepping upon the teats and sometimes bloody milk will result from it. This blood discharge generally disappears after a few days. If the injury, however, is near the end of the teat there exists danger of a closing of the duct or atresia, and this should be guarded by keeping the teat continually in an ointment of 96 parts of vaseline and 4 parts of iodoform, whereas in the teat opening itself a flexible probe must be placed to keep it open. This flexible probe must be dipped first in boiling water or iodine solution, to prevent bacterial contamination after each milking. Removing of the sores by means of the finger nails or little sticks is a dangerous practice. In case hardness of the milk glands exists by injury, apply daily an ointment consisting of iodine salve; that is, 4 parts of iodine crystals, 1 part of iodine of potassium, 2 parts of water and 93 parts of benzoated lard; or rub the bag with an iodine solution composed of 7 parts of iodine crystals and 100 parts of alcohol. A good blister is also formed by a mixture of one ounce of biniodide of mercury and 4 ounces of lard.

Now we come to a group of udder troubles caused by bacteria and which I shall call the bacterial mammitis. There are about thirteen different kinds of bacteria that may cause this trouble. Some of them are due to infection by careless milking; that is, not washing one's hands after having milked an infected cow and then milking a healthy cow. This kind of udder inflammations have their cause in

1. Insufficient milking out of the cow.
2. Draft, cold floors, irregular milking times.
3. Carriers.

The last factor is the most dangerous. It will occur that seemingly restored quarters keep on inheriting and spreading thousands of dangerous mammitis bacteria without showing any symptoms of danger. And this is the reason why it occurs that where a milking machine is used often a whole herd is infected and the milking machine gets unjustly blamed for it.

Therefore, I woud advise to milk all cows that suffer from udder trouble the very last, and also those cows with recovered bad quarters. The treatment for such inflamed quarters consists of:

1. At least four times milking of the quarter daily, good massaging and rubbing in of the quarter with a poke root and alcoholic mixture. Also the cow should be given internally twice a day two spoonfuls of Epsom salts and one spoonful of powdered poke root.

2. Experiments of the last year with formalin have given satisfactory results, but having had no experience with same, I do not venture to advise this internal treatment.

3. The writer has obtained good results with injection of "Stroptococcen sorum," but this can only be applied by a veterinarian.

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QUALITY DARK CORNISH, THE IDEAL FARM fowl. W. W. Officer, Fowler, Colo.

S. C. BUFF ORPINGTONS—COCKS, COCKerels, hens and pullets. Get my prices and breed Orpingtons. F. M. Shank, Route No. 2A, La Junta, Colo. State Vice-President National S. C. Buff Orpington Club.

LIVE STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

CATTLE

HOLSTEIN CALVES—TWELVE HEIFERS AND two bulls, 15-16th pure, four to six weeks old, $20 each, crated for shipment anywhere. Fernwood Farm, Wauwatosa, Wis.

REGISTERED HEREFORD BULLS FOR SALE; one bull, Bonnie Lad 20th 355369, twenty months old. Good individual. Three yearling bulls. Write for full particulars and prices. Fontaine & Weedin Ranch, Galatea, Colo.

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BIG BONE POLAND CHINA BOAR PIGS, REGistered, $15.00. Barney Bros., Haswell, Colo.

REGISTERED, BIG TYPE DUROC JERSEY hogs for sale. Edgemoor Farm, Littleton, Colo. Caldwell Martin, Owner.

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MISCELLANEOUS

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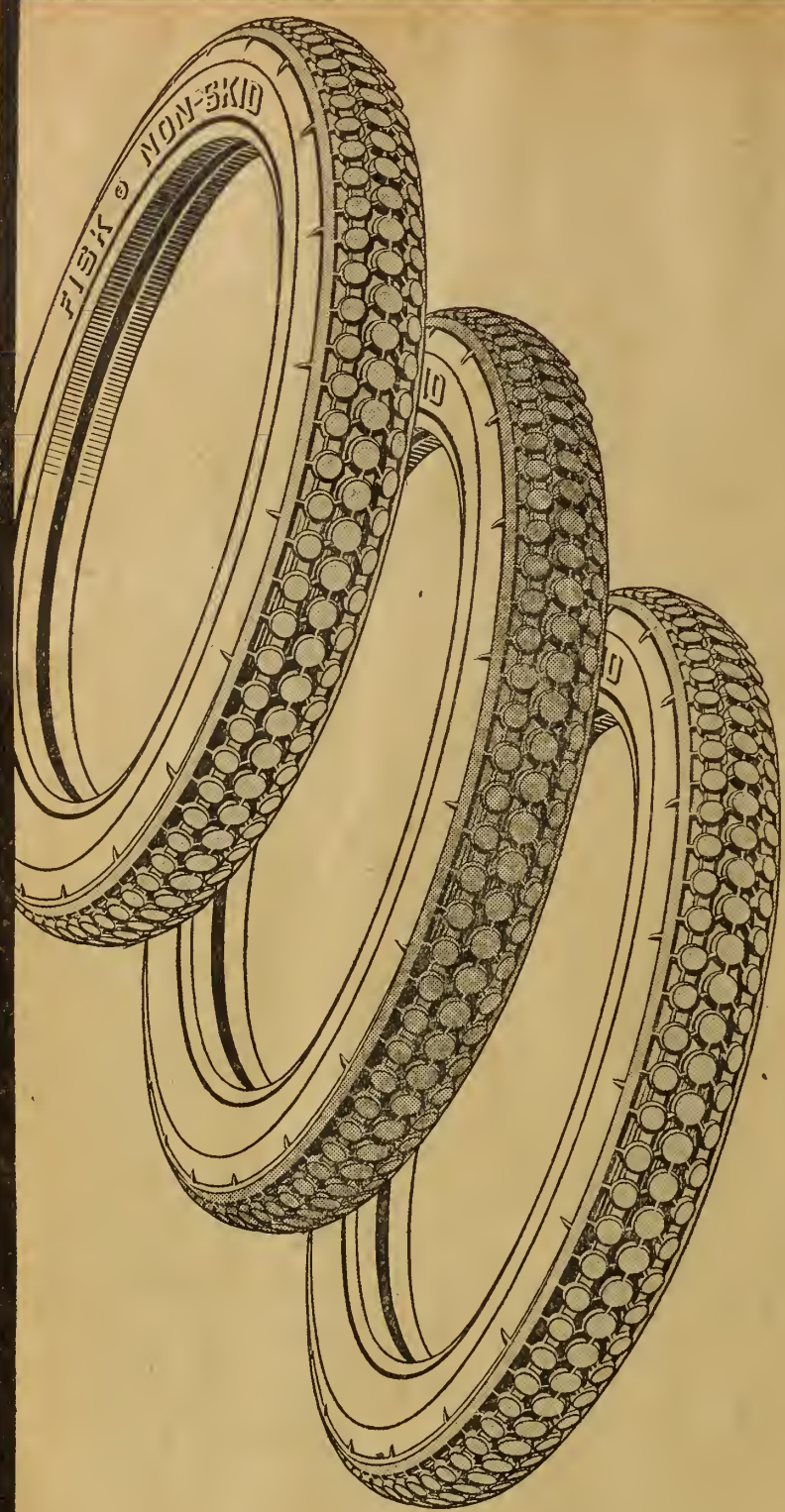

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The Grey, the Black Non-Skid and the handsome RED TOP, Tire De Luxe

Time to Re-tire?
(Buy Fisk)

The "button" tread on Fisk Tires gives you real anti-skid protection ALL ways

ADDITIONAL SAFETY against side slipping is supplied by a rib of rubber extending around the whole tread, on both sides. Fisk Non-Skids are the only automobile tires that furnish such complete protection.

This graphic illustration explains Fisk Non-Skid features—protection from every direction

Fig.1 Fig.2 Fig.3 Fig.4 Fig.5

Fig. 1 *is the outside rib that makes an uninterrupted counter against direct side slipping or skidding—* ***Fig. 5*** *is the same protection on the other side of the tread.*

Fig. 2 *is the outside row of buttons connected by a second rib of solid rubber. The buttons, which are slightly higher than the connecting rib, offer perfect resistance against skidding and because they grip the road so firmly, make the pull forward in soft ground ever so much more positive and certain—****Fig. 4*** *has these identical qualities, but from the opposite directions.*

Fig. 3 *is the master button around which the Fisk Non-Skid tread is constructed. It supplies resistance against slipping in any direction—no matter which way there is a tendency to skid there is always a flat resisting surface to prevent that skidding, and to assist the sure forward movement of the wheel.*

Buy Fisk Tires and get the real protection. Price and mileage are right. You can't buy greater dollar-for-dollar value in tire quality—and no other tire offers such safety. You can buy them everywhere.

THE FISK RUBBER COMPANY
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General Offices: Chicopee Falls, Mass.

Fisk Branches in Denver, Salt Lake City, Billings, Butte, Great Falls, Rapid City, Hastings, Lincoln and Omaha. *Fisk Dealers Everywhere* (7)

FISK Non-Skid TIRES

WESTERN Farm Life

DENVER COLO

"OWN A FARM" EDITION

AUG. 15, 1917

"WHEN DREAMS COME TRUE"

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for this modern farming aid. Make application NOW to your nearest branch bank. EQUIP YOUR FARM with the Plowing Power you will need when the Fall Work Rush Begins. WORK DAY AND NIGHT WITH

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POWERFUL · RELIABLE · STURDY

Two Models, R-12 and S-25

Full information on Request. Write Today. Ask us to send you our Tractor-Farming Magazine, "Samson Siftings," and latest catalogue. A postal will serve.

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(Division, General Motors Co.)
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SELF-OILING WINDMILL
With INCLOSED MOTOR
Keeping OUT DUST and RAIN — Keeping IN OIL

Constantly Flooding Every Bearing With Oil, Makes It Pump In The Lightest Breeze And Prevents Wear

DOUBLE GEARS — Each Carrying Half the Load
Every feature desirable in a windmill in the
AUTO-OILED AERMOTOR
Gasoline Engines — Pumps — Tanks
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WRITE AERMOTOR CO. 2500 12TH ST., CHICAGO

BEAN GROWERS
AND
THRESHER MEN
THE
BIDWELL BEANER
is what you are looking for
It does the work
Write at once for catalog and prices on this and other
BEAN HARVESTING MACHINERY
E. E. SCOTT
1817 15th St. Denver, Colo.

BEAN BUNCHER

We have something new for you—a Buncher that does the work of three or four men. Attach to any Harvester. Simple, Strong and Efficient. Sold direct to the Grower. If interested, address

G. T. HUSTON & CO.
Strasburg, Colo.

WITTE
"Kero-Oil" Engines
Immediate Shipment—All Styles—
2 to 22 H-P.—No Waiting—Big Factory—Big Output—Prices most favorable. Write for my terms and prices—Cash, Payments or No Money Down.—ED. H. WITTE, Pres.
2641 WITTE ENGINE WORKS
2641 Oakland Ave., Kansas City, Mo. Empire Bldg., Pittsburg, Pa.
I Save You $15 to $200

Treat Grain Seed for Smut

I planted winter wheat two years ago. The seed I got had some smut in it. I treated it with blue vitriol, but it had smut last year. I sowed the same seed last fall after treating it with blue vitriol and it has about one-tenth since. Do you think it is in the soil or would it be advisable to change seed?—J. F. B., Hygiene, Colorado.

Treatment of wheat seed only kills the smut on the outside of the seed. If pains have not been taken before treating the seed to fan out the light seed, some smut will always be in the field. There are two methods of fanning out this seed; one is to use a fanning mill rather vigorously; the other is to use a tub of water. The seed to be treated where the water method is used is allowed to run off a shovel in a thin stream into the tub of water. The kernels which have smut in them and the light kernels will stay at the top. The good, sound seed will sink to the bottom. The top is skimmed off and afterwards the sound seed is treated.

In addition to these difficulties, the soil, especially in certain dry land regions, often becomes infected with smut and in spite of treatment a small amount of smut will appear in succeeding seasons. Especially is this true on summer fallowed land, or partially summe rfallowed land, where it lies contiguous to smutty fields.

It would probably be better for you to continue treating the seed as carefully as possible. It would be of no advantage to change seed unless you get a higher yielding variety, because the chance of smut is so abundant in the neighborhood that even new seed would be infected in handling.—Alvin Kezer, Chief Agronomist, Colorado Experiment Station, Fort Collins, Colo.

Cereal specialists of the United States Department of Agriculture give the following instructions for seed treatment to prevent smut:

Preventing Bunt or Stinking Smut of Wheat

Use seed of the best quality obtainable. Before subjecting the wheat to the fungicide bath, pass it through a fanning mill to remove light, imperfect kernels and any smut balls that may not have been blown out of the grain when threshed.

Following is an effective method of seed treatment: A tank about 6 feet long, 3 feet wide, and 18 inches deep, or some similar receptacle, should be filled a little more than half full of a solution consisting of one pint of formaydehyde to 40 gallons of water. Pour the grain in and stir with a hoe or shovel in order to bring to the surface any smut balls not removed by the fanning mill. After a bath lasting 10 to 15 minutes remove the grain from the tank, shovel into a pile, and cover with bags previously dipped in the solution. The seed may be sown within a few hours after treatment or it may be allowed to remain in the pile until the following morning. This treatment will cause considerable swelling of the kernels, and for this reason the drill or seeder should be set to allow for the seeding of a larger amount of seed per acre.

Where the seed wheat is known to be free from smut balls, it may be treated in the bag by putting not more than a bushel in each bag and tying these well toward the top in order to allow the grain more or less freedom of movement while in the bath.

Bluestone Treatment

Certain growers use the copper sulphate or bluestone treatment for prevention of bunt. Under this treatment the seed wheat is subjected to a five or six minutes' bath in a solution consisting of 1 pound of bluestone to 4 or 5 gallons of water. The method of handling the grain while in the bath is like that described above for the formaldehyde treatment, except that the seed is dried as promptly as possible after treatment and may be planted without further delay. Experience has shown that of the two treatments here described the formaldehyde method is less liable to injure the seed.

Prevention of Oat Smut and the Covered Smut of Barley

In all cases run the seed thru a fanning mill in order to remove smut masses and imperfect grains. Then place the seed to be treated in a wagon box or in a pile on the granary floor. By means of a sprinkling can apply a solution of formaldehyde consisting of 1 pint of formaldehyde to 40 gallons of water. Stir with shovel or hoe until every grain is thoroly wet. Shovel into a pile and cover with bags previously disinfected for a few hours or over night. The seed should then be dried sufficiently to permit sowing. This same method may be varied by using bluestone instead of formaldehyde, but the bluestone solution is liable to prove more injurious to germination.

In all sections of the United States they are adopting as the best tried out method of protecting the herd from hog cholera, immuning with the double process; and the officials of the government connected with the livestock interest are universally advising and insisting that the herds of swine be immuned by vaccination.

A man is as likely to get his wages increased for the way he works as for what he does.

War Orders Rushed

THE magnitude of the great war in which we are now engaged has necessitated unusual preparation. Mighty forces are marshalling, great stores of food and munitions are being gathered, and the energies of the nation are focused on problems incident to the war.

At the very beginning of the war the whole Bell System was placed at the disposal of the Government. No nation has entered the war with such a comprehensive and efficient telephone service.

As our military establishment grows, the demands of the Government upon the Bell System are bound to increase and always they must take precedence over all others.

Increased activity in commerce and industry as the result of larger demands for food and munitions from our allies and for our own use, means more need of telephone service by private business.

But private business must always be subordinated to the Government service. Each individual American will co-operate in this patriotic service, and submit cheerfully to inconvenience or delay in his telephone service, when he understands how vital it is that Government service shall take precedence over all else.

The Mountain States Telephone & Telegraph Co.

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COTTON SEED MEAL

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We are pioneers in this business. COTTON SEED MEAL is our specialty, and has been for over 40 years. We devote to it our entire time. We can supply you at all times. We select the quality shipped under our Brands and keep them up to a high standard.

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Find out and satisfy yourself how much you can save by getting your farm implements direct from Galloway—the maker. This direct dealing is actually buying at wholesale, and even less, and saves you 25% to 50% on everything you need on the farm—Spreaders, Tractors, Engines, Separators, Wagons, Implements, Vehicles. I'll tell you why you can save by direct buying in my big, free book. I'll also tell you where the extra money goes—the money you save by dealing direct with the manufacturer.

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It's the greatest bargain book ever published, and will save my farmer friends thousands and thousands of dollars. Write me for the book today. A postal will do. Let this book be your buying guide and save you $200 to $500 on your summer purchases. Don't hesitate. Dont put it off — but send tonight for my big money-saving book. Advantageous shipping points save you freight.

WM. GALLOWAY, Pres., WM. GALLOWAY CO., 1827 GALLOWAY STATION, WATERLOO, IOWA

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AMERICAN SHEET AND TIN PLATE COMPANY, Frick Bldg., Pittsburgh, Pa.

Published Semi-Monthly by The Farm Life Publishing Co., Denver, Colo. 14th and Arapahoe Sts.

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WESTERN FARM LIFE

A Western Magazine for Western Farmers and Stockmen

Comprising Ranch and Range, Farmers Life and Fruit Journal, Trans-Mo. Farmer and Ranchman

Largest Circulation of Any Farm Magazine in the West

Volume XIX | DENVER, COLORADO, AUGUST 15, 1917 | Number 16

A Day With Farmers of School District Nineteen

PROGRESS IN RURAL EDUCATION ON COLORADO PLAINS

YOU have heard of the little red schoolhouse? No doubt read about it, if you never attended school there. Around it cluster romantic memories. It was with us in the "good old days." It belongs in the same happy-go-lucky class as the old oaken bucket and is equally unsanitary. You don't hear the people brag about their little red schoolhouses nowadays. They have something better in communities that are alive—and, unfortunately, something worse in communities where the spirit of progress is still in the minority. The man who travels over the highways and byways of these mountain and plains states can see contrasts in the course of a day's journey. In one district it is "the little sod schoolhouse," where the entire school membership, teacher and pupils, comprises less than a dozen of varying size and age and half a dozen grades. Again, in an adjoining county, the writer visited the school house here shown, the excellence of which was given public notice by a signboard with the following inscription:

STATE OF COLORADO
STANDARD SCHOOL
SUPERIOR CLASS

These two schools are separated by less than a day's auto journey, in communities where the farmers have equal opportunities for progress and where agricultural conditions and population are about alike. One community has taken a forward step by eliminating four one-room lameduck schools and building a modern, centralized school, which will be attended by fifty or more pupils this fall, and will be under the management of a married couple, experienced teachers, who together will be paid $200 a month.

The picture of the sod schoolhouse will not be shown, because that district has become inoculated with the better school germ and will soon have a modern building. What it needs is not adverse publicity, but a lift along the road of progress. Of the "Standard School Superior Class" I want to tell you more, because I spent the greater part of a day in and around that schoolhouse last month, learning from the lips of the fathers and mothers, whose foresight and money built the school, what their hopes and aspirations were, and seeing for myself what the school was accomplishing for the young men and women of District 19, Kit Carson county, Colorado.

District 19 Centralized School, Kit Carson County, Colorado

The school is twelve miles from the nearest town, on the summit of a "rise," in the middle of an unbroken sea of prairie. It is planted there as a sign of progress by dry land farmers. It is as good as the best of the homes in the community. Therein it differs from the other type of schoolhouse, still too common on the plains and in the mountain districts. Children are sometimes compelled to attend schools that would not be considered comfortable calf shelters.

School Topic Uppermost

The school topic was uppermost at the farmers' meeting of District 19, because Prof. C. G. Sargent, head of the Department of Rural Education of Colorado Agricultural college, was the chief speaker for the day. The farmers wanted to know how to proceed further with their plans for centralizing or consolidating their schools; what to do about transportation of the pupils, and the like. There was no disagreement among them as to the value of one good school over several weak ones, but they were not sure about working out the details. For the first season they expect to hire auto owners to transport pupils to and from school. Later, if found advisable, the school district will purchase an auto-van to do the work.

The parents were very much interested in the matter of discipline among children en route to and from school. Prof. Sargent explained that it was customary, in consolidated districts, to have the driver of the school van placed under bond and to engage a man who would give the pupils the same supervision while they were in the van as they get when at school. The greatest distance any pupil will have to travel in District 19 is about seven miles. Pupils are expected to meet the van at a convenient point on the main road, where the homes are off the road. Many questions were asked concerning this feature, because of inconveniences that might be experienced during blizzards. Prof. Sargent declared that this problem had been met in other districts by using judgment; that no pupil should be obliged to undergo any hardships. During one unusual storm that visited Colorado several years ago, one of the consolidated schools remained closed several days. This school, however, because of its excellent transportation facilities, was able to reopen in a much shorter time than some of the city schools.

"These problems will work themselves out here on the prairie as they have elsewhere," said Prof. Sargent.

Teachers Also Farmers

W. J. Conley and wife, who are the teachers, have had ample experience in rural and town schools. They have a farm near District 19 school and will continue to operate it, hiring farm help so that they can devote all of their time to the school. Being themselves farmers, they will be able to give school work the proper agricultural cast.

The main floor of the school building is composed of two rooms, separated by folding doors. There is a full basement with concrete floor, which is used as a community kitchen and dining room.

District 19 Farmers' club, under whose auspices the school meeting was held, now numbers over 100 members. It was organized in February, 1916. H. C. Sawyer retired as president at the meeting which the writer attended, because he is leaving for California, and Adam Pfiester was elected by unanimous vote to succeed him. After a brief business session, there was a program of music and recitations, and the addresses followed. Prof. Sargent delivered an illustrated stereopticon lecture on school consolidation, showing, by word and picture, just what was being done in the state to better rural school conditions. He congratulated the people of District 19 on

(Contnued on Page 15)

District 19 Boys' Club—Top row, left to right: Hervey Westover, William Conerty (Leader) Middle row, left to right: Walter Conarty, Aljel Stinton, Sollie Stone, Elmer Joy, Forest Richmond, Arthur Holsen, Ores Sloan
Bottom Row: Foster Wickham, Vern Joy, Tom Conarty, Charles Conley, Bernie Christopher.

District 19 Girls' Club—Top row, left to right: Winone Sloan, Vivian Pickett, Opal Conerty
Bottom row, left to right: Irma Conerty, Christina Galer, Mrs. Will Conerty (Leader), Irene Wickham, Beulah Wilson

Hogs on Pasture and Buttermilk Show Big Gains

FEED FROM THE CREAMERY AN ECONOMICAL PORK RATION

H. J. GRAMLICH, Nebraska Experiment Station

ON May 26 four lots of ten pigs each were started on experiment. These were fall pigs, bred on the University farm. The lots included specimens of the Poland China, Duroc Jersey and Hampshire breeds. Until two weeks before the experiment started they were with fattening cattle. They were then given a full feed of grain until the opening of the experiment.

The purpose of the experiment was two-fold. One object was to ascertain the economy of rape pasture for fattening hogs as compared to dry lot feeding. The hogs in each of the two lots received corn and tankage in self-feeders. The second object was to ascertain the advisability of feeding semi-solid buttermilk, a by-product of creameries which is advertised as a hog feed. Two lots of hogs were fed buttermilk in conjunction with corn, one lot being on rape pasture and one in a dry lot.

The hogs were weighed three days at the opening of the experiment and three days at the close, and the averages of the three weights taken as official weights for the experiment.

The prices used for feeds were as nearly as possible the prices prevailing on the market during the experimental period: Corn, $1.60 per bushel; tankage, $75 per ton, and buttermilk, 3½c per pound, which is the barrel price of this product. Pasture was charged against the lots which were on grass at the rate of ½c per day.

How the Pigs Were Fed

The pigs in the two lots which were put on self-feeders were allowed access at free will to unlimited quantities of corn and tankage from the time they started on experiment. Those in the two lots receiving corn and buttermilk were fed as follows: The method of feeding was one recommended by the company making the semi-solid buttermilk. Corn was ground and fed in proportions of seven parts of corn to one of semi-solid buttermilk twice daily. The buttermilk was diluted sufficiently to allow it to mix well with the corn and was then mixed just prior to feeding. No pigs were off feed during the experiment. During the two weeks prior to the experiment they had been allowed full feeds of corn and were in good condition to start the test.

Hogs in the Experiment on Rape Pasture

Results Are Summarized

By noting the average daily gain one will see that Lot 2, on rape pasture, fed corn and semi-solid buttermilk, made the largest gain, namely 2.26 pounds per day, which would be called a very good gain. The hogs on rape pasture receiving corn and tankage made a gain of 2.06 pounds, or, the buttermilk ration produced one-fifth of a pound more gain per day than the tankage ration. By comparing Lot 2 and Lot 3, which are the two buttermilk-fed lots, we find that Lot 2 on rape pasture made .33 of a pound more gain per day than Lot 3 in the dry lot. This shows considerable margin in favor of the rape pasture. By noting the amount of feed required to make one pound of gain, we find that the rape pasture saved two-thirds of a pound of corn and one-tenth of a pound of buttermilk and we find further that $1.79 is saved in the cost of putting on 100 pounds of gain by using the rape pasture.

By comparing Lot 1 and Lot 4, which were the two lots receiving corn and tankage in self-feeders, we find that Lot 1, which had access to rape pasture, made .30 of a pound more daily gain, but in doing so required practically the same amount of corn, although considerably less tankage. In other words, Lot 1, which had access to the rape pasture, had a sufficiently greater appetite to increase the daily corn consumption over that of Lot 4, to such an extent as to offset the economy from their additional gain. By noting the cost of producing 100 pounds of gain, we find that allowing ½c per day for the rape pasture makes the cost of gain the same in both lots. As these ten hogs were on one-fourth acre of rape pasture, we find that ½c per day proves to be good rental for the land, as it would amount on a full acre to 20c daily, and figuring this over a period of five months, which is the normal pasture season of rape, we would have $30 rental from the land.

Table Showing Details

Forty-five Day Pig Feeding Experiment, May 26 to July 10, 1917—Nebraska Experiment Station

	LOT 1	LOT 2	LOT 3	LOT 4
RATION	Corn, tankage, rape pasture	Corn, semi-solid buttermilk, rape pasture	Corn, semi-solid buttermilk, dry lot	Corn, tankage, dry lot
Average initial weight	142.3	144.	144.3	143.8
Average final weight	235.03	245.7	231.27	222.43
Average gain	92.73	101.7	86.97	79.13
Average daily gain	2.061	2.26	1.933	1.761
Average daily ration—				
Corn	7.531	8.711	8.524	6.397
Tankage	.246	.....	.....	.357
Buttermilk	.....	1.236	1.235	.. ..
Feed consumed per one-pound gain—				
Corn	3.654	3.85	4.409	3.633
Tankage	.119	.....	.....	.2027
Buttermilk	.....	.547	.639	.....
Cost of one hundred pounds gain—				
Corn at $1.60 per bushel; tankage at $75 per ton; buttermilk at 3½c per pound	$10.89	$12.83	$14.84	$11.14
Pasture at ½c daily	.24	.22	.....	.....
	$11.13	$13.05	$14.84	$11.14

Purebred Percherons That Never Taste Grain

WYOMING HORSES THRIVE ON ALFALFA AND MOUNTAIN PASTURE

T. S. PARSONS

IN Johnson county, Wyoming, near the little city of Buffalo, is a ranch which in pioneer days was the center of many a sanguinary conflict between the cowboy and sheep herder. On this ranch horses of the purest pedigree are grown; horses of Percheron blood that are unsurpassed in the finest breeding stables of the eastern or central states or even in the native home of the Percheron across the sea. The thing that strikes the visitor to this ranch most forcibly is the fact that these fine horses are fed no grain.

There is no intensive feeding whatever on the ranch. The horses that are raised here are brot to maturity, weighing a ton and more, without ever having had a bite of grain. They receive no other feed than native pasture grasses and alfalfa hay. On the ranch may be seen dozens of mares four and five years old that have never tasted grain. Many of them have colts at their sides, yet they are as fat as the average well kept horses of the eastern and central states, where horse breeding has been developed to the highest degree. To one not familiar with conditions in the mountain states it is difficult to realize that such horses can be raised without grain and with no other shelter than open sheds for winter protection.

The mares and colts are out in the pasture practically the year round, the summer months being spent in the mountain pastures, and the winters in the pastures and meadows of the home ranch. During the winter alfalfa hay is fed. It is spread on the ground in the pastures where the mares and their sturdy offspring may be seen even on the coldest days of winter. The mares and colts grow thick, shaggy coats of hair which protect them from the winter cold. Black is the prevailing color, and the aim is to breed true to type. The horses are not as smooth and sleek as the horses of the east that are carefully groomed every day, but they are strong and thrifty looking nevertheless.

Mr. J. P. Gammon is the owner of the ranch. He is a thoro horseman and knows the business from beginning to end. He has raised horses under Wyoming conditions for many years, and by careful selection, and importation of new blood, has built up one of the best herds in the United States, or in any other country for that matter. Mr. Gammon keeps up the standard of his herd by purchasing and importing from time to time the best blood to be obtained on either side of the ocean. Several times the champion at the "International" has been brot to Wyoming to head the Gammon herd.

Mr. Gammon and his son, who is associated with him, know their horses thoroly and find a market for their stock all over the United States. Their records are kept in such shape that a glance will show the breeding and pedigree of any horse on the place. Mr. Gammon can call any one of the hundred or more by name and can almost give their pedigrees offhand. A prospective buyer seldom departs without a horse. The herd is such that the desired type can nearly always be found.

One, Two and Three Year Old Percherons on the Gammon Ranch Ready for the Show Ring

A French army officer early in the war was purchasing Wyoming horses for the army. On a visit to the Gammon ranch he expressed great surprise at the unusual high class of horses bred there. He said that these horses compared favorably with the best produced in the exclusive Percheron district of France. What surprised him most, however, was the fact that such horses could be produced without the intensive care and

(Con't on Page 14)

Statistics Show State's Agricultural Supremacy

COLORADO OFFERS MANY ADVANTAGES TO THE FARM SETTLER

COLORADO'S crop yields exceed the average for the United States on practically every product by 25 to 100 per cent. Mississippi valley states with all of their boasted agricultural wealth cannot measure up to Colorado when it comes to actual yield per acre. Those high yields are due largely to the practice of irrigation, but even on non-irrigated lands the per acre production compares well with that on lands in the corn belt states. The following figures, taken from the United States Department of Agriculture Year Book, show comparative yields of leading agricultural crops, Colorado leading all states in nearly every crop:

STATE	Wheat Bushels	Oats Bushels	Rye Bushels	Barley Bushels	Hay Tons	Potatoes Bushels
Ohio	16.6	33.0	16.9	27.8	1.32	86
Indiana	15.8	29.4	15.7	25.7	1.25	81
Illinois	16.3	32.2	17.2	29.4	1.22	79
Minnesota	13.9	31.4	19.1	24.5	1.57	102
Iowa	18.0	32.4	18.5	26.7	1.40	84
Missouri	14.1	24.1	14.5	23.8	1.10	71
North Dakota	11.9	27.8	16.1	21.1	1.26	96
South Dakota	11.8	27.4	16.7	22.0	1.36	86
Nebraska	17.8	25.4	16.4	21.6	1.48	74
Kansas	13.9	24.9	14.6	18.1	1.36	65
Oklahoma	12.5	24.6	12.5	21.5	1.23	65
Texas	12.4	29.0	13.6	23.9	1.39	62
U. S.	15.0	30.0	16.4	25.6	1.41	97.5
COLORADO	24.6	38.7	17.6	35.7	2.30	116

For the year 1916 the statistics compiled by the State Board of Immigration show the value of Colorado's crops to have been $86,880,250. When the comparatively small area on which these crops were produced is considered, it will be noted that no eastern or middle state can make a similar showing. Following are the official figures:

CROP	Acreage	Production	Value
Sugar beets, tons	211,000	2,321,000	$14,158,100
Hay, tons	892,000	2,047,000	20,047,000
Wheat, bushels	727,000	10,830,000	14,079,000
Potatoes, bushels	50,000	6,900,000	8,694,000
Corn, bushels	489,000	7,628,000	6,102,400
Oats, bushels	300,000	10,032,000	5,016,000
Barley, bushels	130,000	4,108,000	3,697,000
Rye, bushels	30,000	392,000	392 000
Field peas	95,000	.....	1,000,000
Beans, bushels	38,000	450,000	1,665,000
Kafir corn, bushels	70,000	1,274,000	764,400
Forage crops	450,000	.....	4,500,000
Apples, bushels	.....	2,100,000	2,500,000
Peaches, bushels	.....	535,000	754,350
Pears, bushels	.....	130,000	425,000
Cherries, crates	.....	50,000	105,000
Other fruits*	50,000	.....	1,000,000
Cantaloupes	32,000	.....	512,000
Broom-corn	8,000	.....	96,000
Cucumbers	4,000	.....	28,000
Onions, bushels	650	195,000	395,000
Other truck crops	40,000	.....	750,000
Miscellaneous	10,000	.....	200,000
	3,626,650		$86,880,250

*This includes all fruit land.

Colorado is a big state. This fact should always be borne in mind by settlers who come here from the smaller states further east. Its area is 66,341,120 acres. It ranks seventh in size among the states of the Union. Its width is 276 miles, or about the same as the distance between Chicago and St. Louis. Its extreme length is 387 miles, or 20 miles less than the distance between New York and Augusta, Me. Its area is a little greater than the combined areas of the states of Pennsylvania, New York, Maryland, Massachusetts, Connecticut, Delaware and Rhode Island. Its irrigated areas combined are about as large as the state of Connecticut. The area cultivated without irrigation is far greater than the irrigated area. The combined area of all patented farm land in the state is over 21,000,000 acres, or about the same as the combined areas of Maine and Delaware. The national forests of the state contain 13,094,978 acres, an area about one-half as large as the state of Ohio. On July 1, 1916, there was 14,908,127 acres of government land open to homestead entry, an area nearly as large as the state of West Virginia.

Much of the homestead land, however, is not suitable for agriculture, but may be used for grazing, some of it under the new 640-acre stock raising homestead law. Other areas of open land are too rough and rocky for cultivation; some too high for general farming. However, there is still much desirable land to be had free.

The homeseeker's best opportunity lies in the purchase of idle farm lands now held for speculative purposes by non-residents, some of whom originally homesteaded the land, while others acquired the homesteads by purchase from settlers who came west merely to file, prove up and sell out. Productive value considered, this land can be bought at low figures, with plenty of time for payment. This applies to the non-irrigated, or so-called dry farming lands, as distinguished from irrigated lands. There is no difference between the lands; the soil characteristics are the same. The only difference is in the application of water from irrigation ditches. With water intensive cultivation is possible. Without it, the farmer relies on scientific methods of soil culture and moisture conservation to bring results. The difference is in the crops grown and in the manner of handling the soil, more land being needed for non-irrigated farming, with greater dependence upon livestock, while on the irrigated farm, the culture of fruits, truck crops, sugar beets and the like may be followed.

Land values vary according to natural conditions, altitude and water supply. Lands that are not susceptible of irrigation, because too remote from dependable sources of water, are quoted anywhere from $10 to $40 per acre, according to location, soil, rainfall, improvements and topography. Irrigated lands are quoted from $100 to $300 per acre, with higher figures for developed trucking or fruit farms where a very small acreage is required. These figures on irrigable land, in most instances, include the cost of the water.

The question usually asked by the prospective settler after he is satisfied that he can buy fertile land at reasonable figures, or perhaps get a free homestead, is: "Can I find a market for my crops?" In this respect Colorado is in position to answer affirmatively. There is a good home market for most products and transportation facilities for shipping out surplus are excellent. Sugar beets, one of the chief products from the standpoint of money value, are all manufactured into sugar at the source of supply. More than a dozen sugar factories, each representing a valuation of from one million to a million and a half, grind up the beets and the sugar is shipped to all parts of the country.

Colorado is famed from coast to coast for its fruits. Rocky Ford cantaloupes are greedily taken on the New York, Chicago and other big markets as standard products of the vine. Colorado apples are in demand everywhere because of their fine flavor, appearance and uniformity of pack. The same applies to Colorado peaches, while cherries from this state are shipped out by the carload for use in making pies for Chicago and other great cities.

Colorado lambs are another of the staples that the eastern market is eager for, to the extent of paying $20 per hundred pounds, live weight—a figure attained in the spring of the present year on the Chicago market for lambs fattened at Fort Collins. Colorado pulp-fed steers are another of the special products that command attention.

It is this specialization, made possible by favorable climatic and moisture conditions, and the absolute control of moisture thru irrigation, that has given this state its hold on outside markets.

There is, however, also a good home market. Many sections of the state are too high for general agriculture. In these sections mining is the chief industry. The miner must be fed. He makes good wages and he is willing to pay high prices for fresh products of the farm. This has given a nearby market for eggs, butter and garden truck that is favorable every week of the year when produce is to be had. In fact, the state has, so far, been unable to supply this demand fully, millions of dollars being annually sent out to other states for products to be consumed here, which could as well be produced at home.

On top of that comes a summer demand from tourist traffic now running into the hundreds of thousands of temporary consumers with plenty of money to buy first-class products. The mountains are dotted with hotels; automobile roads lead to points formerly inaccessible, and annually a greater tide of tourist travel comes to "The Nation's Playground" for an outing. These thousands must be fed, and that is the job for the farmer and gardener, who gets remunerative prices for all he can produce.

Wheat Harvest on Irrigated Land

Letter From a Granger

This is the season of the year when the farmers who meet at the postoffice or garage (blacksmith shop), salute each other with:

"Did you get any of that rain day before yesterday afternoon?"

And the answer is: "I was just on the edge of it." * * * "I got a flood." * * * "We had some hail in ours, but no damage." * * * "I got two inches of rain on my crops and now the ground will bake as hard as bricks."

The rains go in streaks across the prairies and where the streaks cross they have floods, and it always seems as though those who need the rain most are the ones who are left out. We had a good rain just at sundown on the 17th (July), and now we can go ahead with our farming until it is time to watch the clouds again. The general crop conditions are good; the farmers all speak of a good stand of their crops. All the land that was broken out is in crops, but the acreage of new breaking is below normal this year. Owing to the winter wheat blowing out last winter, the acreage of corn has been increased, as also the acreage of spring grain, beans, feed crops, etc. The acreage of potatoes is below the average and most of us would have planted more if we could have got the seed. Hundreds of acres were planted to poor and indifferent seed, in spite of the efforts of the Council of Defense, and if the farmers had some other help beside advice doped out to them it would be more appreciated. We have had our Tri-County Federal Farm Loan association organized since last winter, have complied with all the laws, rules and regulations, and are now waiting for the appraiser from the district bank. Many of the members are getting discouraged and openly declare that the government does not want us to have the money, while others are hoping that we will not get the money at a time that will make the interest come due just at threshing time and put them at the mercy of the speculators.

This food preparedness spasm is a huge joke so long as the farmers are not guaranteed a fair price for wheat they raise and the consumers are not guaranteed that they will not be bled to death.

GAD BARNEY,
Lecturer Tri-County Grange, Haswell, Colorado.

Little Lesson in Dry Farming

(Reprinted because of error in previous issue.)

The following is a report of a conversation which occurred between a dry land farmer, newly come to Colorado, and Dr. Vernon T. Cooke, the dry farming expert, who is at present sojourning in Denver:

Dr. Cooke: What kind of a drill do you use?

Farmer: Single, the double-disk wears out too soon.

Cooke: Does it wear out any sooner than the single?

Farmer: Well, (hesitatingly) I think so, and I object to the double-disk because it clogs up with trash too easily and the single does not.

Cooke: But all trash should be underground to improve the texture of the soil and enable it to hold more moisture and make more fertility available for the growing plants.

Farmer: Ah, yes, but what you plow under won't rot.

Cooke: Yes it will, in time, with moisture; and without moisture in your soil you cannot raise crops. Trash on one's seedbed shows poor farming and poor preparation of the soil.

Farmer: Well, Doctor, which do you prefer?

Cooke: Well, a double-disk press-wheel drill. It gives a firm covering of soil on the seed sown and keeps the roots of the young growing plants warm and snug, enables the germinating seed to withstand more cold and freezing weather, and prevents some evaporation.

Heck—A doctor says it helps digestion to laugh at your meals.

Peck—If I were to laugh at the meals my wife prepares I'd probably get a plate thrown at my head.

Treatment for Larkspur

Western Farm Life: Here is something that may help save stock, which was tried here in northeastern part of Weld county last spring with good success and every cow saved after drenching. This is for stock affected with larkspur: One-half pint coal oil; half pint sweet milk; give as a drench. The coal oil can be given alone if milk is not handy. A bottle of coal oil can be carried in the saddle pocket for immediate use while riding the range. Plenty of fine salt with soda is a preventive also. Use one pound soda to twenty pounds of solt.—G. F., Gifford, Nebraska.

The above was submitted to Dr. George H. Glover, head of the veterinary department Colorado Agricultural College, for his advice and his reply is as follows:

Coal oil has been tried as a cure for most everything and its value in destroying external parasites has been fully demonstrated. There are other coal products, however, which are cheaper and more effective. Since coal oil and larkspur both depress the heart and respiration I fail to see how the treatment recommended can be beneficial. Most animals poisoned on larkspur will recover without treatment if left entirely alone. It is good practice to turn the head up hill to relieve the pressure of the bloated intestines on the lungs and heart. Bleeding may be beneficial, but this is doubtful. Stimulants are beneficial but the animal should not be excited. This is why stimulants or other treatment should be administered hypodermically and not by drench. Strychnine and atropin are especially indicated. Parke Davis & Co. make tablets for hypodermic use in larkspur poisoning. Dr. C. Dwight Marsh of the U. S. Department of Agriculture has reported very satisfactory results from the use of the following formula, administered hypodermically:

Physostigmin Salicylate..... 1 gr.
Pilocarpin Hydrochlorid..... 1 gr.
Strychnine Sulphate.....½ gr.

(Signed) G. H. GLOVER.

Idaho College of Agriculture

The College of Agriculture of the University of Idaho will open September 20, 1917. The School of Practical Agriculture, or winter course, opens October 15.

The war situation will not interfere in the least with the instructional work in agriculture at the University the coming year. Never was there so great demand for young men technically trained in agriculture. Never was there a time more fitting for the young man to attend college for preparing himself in agriculture. During the coming months, and possibly years of the war, trained men in agriculture will be so much in demand for handling the many and complicated problems of food production and conservation, working in both state and national service, that the supply of capable men will not be adequate. After the war the whole world will call for capable and well-trained leaders to restore and rebuild agriculture in the various countries. The ambitious young man should start at once to prepare himself to be a leader in agricultural fields.

In addition to the work in agriculture for young men where specialization is provided for in animal husbandry, dairying, farm crops, and horticulture, work is provided in the College of Agriculture for young women in Home Economics, offered both in a four-year course and in a three-years' winter course.

Write the Dean of the College of Agriculture, Moscow, Idaho, for special cotolags describing the above mentioned courses.

Chance for Inventive Genius

Thousands of inventions for combatting the submarine have been sent to Washington, thus indicating the fruitfulness of American inventive genius. Why cannot someone help this man in his troubles:

"Today I had a cow blote and I had to stick her and saved her. Now I have no pasture but have good alfalfa and would like to know if there wasn't a sort of tube to put in a cow that you could leave in her all time so the gas could escape and that way I could pasture them on the alfalfa. Now if there is anything of this kind please let me know how to use them and where to get them."

Here is certainly an opportunity for inventive genius to go the limit. It might be well to suggest to prospective inventors that this escape valve should not only be perfectly adjusted but should be provided with a whistle as well, which will enable the cow to give warning of distress, and possible disaster, should the valve be set to blow off at too high a pressure.

Seriously, the question has often been asked if something of this kind could not be devised, for it is a well-known fact that while alfalfa would make an ideal pasture, there is no condition under which cattle and sheep can be pastured on it with safety. Here is an instance where controlling the effect would not remove the cause and, the cause still being active, some other effect would arise to separate the cow from her earthly ambitions.—Geo. H. Glover, Colorado Agricultural College, Fort Collins, Colorado.

The Farm Water Supply

Avoid contamination of the farm water supply. Simple precautions are necessary, suggests P. J. Newman, assistant professor of chemistry in the Kansas State Agricultural College. Wells should be placed at a safe distance from chicken yard, barn, cesspool, hog lot, or other source of contamination. The safe distance depends upon the type of soil surrounding the well. If the soil is loose and gravelly the distance should be at least 200 feet. In sandy soil, it may be a trifle less. With an impervious clay soil the distance may be from 100 to 150 feet. The slope of the land in any case, however, must be such that the surface drainage is away from the well in all directions.

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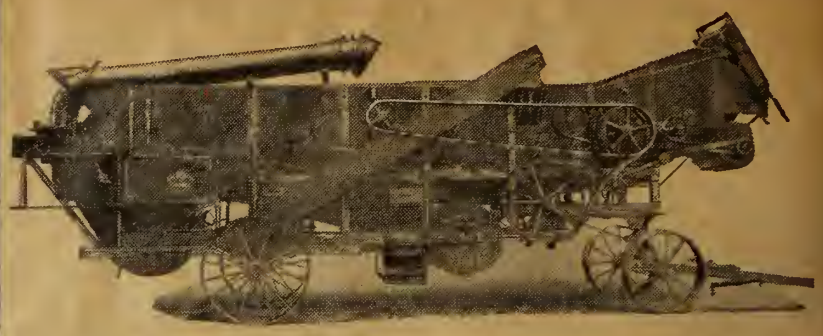

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THE WESTERN SLOPE

THE counties included in the designation of the Western Slope are Delta, Gunnison, Hinsdale, Mesa, Montrose, Ouray and San Miguel. This territory is drained by the Grand river and its tributaries, including the Gunnison, Uncompahgre and lesser streams. These streams carry a good volume of water the year round and afford an excellent supply for irrigation, as well as means for the development of hydro-electric power. The valleys of the Grand and tributary streams are among the most productive in Colorado and also the most extensive fruit-growing area.

Adaptability of the section to fruit growing is chiefly due to the mild climate, sheltered valleys, good air and drainage, together with the proper soil and moisture conditions. The frost-free period on the Western Slope is much longer than that of the Eastern Slope of the Rockies and the winters are less severe. Color and quality in fruit is due to the effect of sunshine and soil.

Mesa, Montrose and Delta counties contain most of the fruit lands, as well as the bulk of the agricultural lands, though there are excellent valley sections in the other counties suitable for general farming, stock raising and fruit culture. The chief industry, however, in Ouray, San Miguel, Gunnison and Hinsdale counties is mining. Gunnison county is noted, in addition to its output of precious metals, also for coal, marble, granite and other building stone. In Montrose and San Miguel counties are found the carnotite deposits which are among the chief sources of the world's supply of radium. As yet the carnotite fields are without railroad transportation, but lines are projected which, when in operation, will be followed by the development of the rare minerals found in large deposits in that region.

While the government figures show a vast area of land still open to homestead entry—something over 4,000,000 acres—only a small percentage of this is fit for actual farming, on account of the rough character of the country. The smooth valley land has mostly been settled, but here and there may be found some desirable homesteads, and there is much land that will come under the 640-acre grazing homestead law.

In Montrose county is located the Uncompahgre valley reclamation project, for which the water is supplied by the Gunnison tunnel. Fifteen thousand acres will be open to entry under this project when the irrigation works are finally completed.

The Western Slope counties are not so well adapted to dry land farming as is the country on the east slope of the Rockies, because of a lighter rainfall. However, in the higher valleys farming without irrigation is successfully carried on; Dairying is one of the recent developments in these valleys.

While three of the counties in this region are famed for their fruit, the tendency is toward diversified farming. Even the specialists who have been devoting themselves exclusively to fruit have, of late years, paid some attention to field crops and livestock Alfalfa production, especially, has shown a wonderful increase. Silos are being built; sheep and cattle feeding has come into practice and poultry raising and pig raising are becoming more common, often in connection with orcharding.

Sugar beets, potatoes and onions have brot the farmers big money in the last two years. Corn is being grown and there has been a remarkable increase in the wheat acreage, which is making that grain one of the important crops of the district.

The prospects this year are for almost a full crop of all kinds of fruit, with indications of extremely high prices to the producer. This, together with the general crop yields of the slope, will give these counties a prosperity beyond that experienced in any previous year.

Substantial cities and towns dot the valleys. The school facilities are unexcelled. Rural schools are especially strong, and consolidation is farther advanced in these counties than in most rural localities in eastern states.

Crop yields are extraordinarily high, alfalfa often making 6 tons per acre per season, while 4 tons is common. Sugar beets average nearly 15 tons per acre on irrigated land and the sugar content is high.

Electric power development is in its infancy, and it is safe to predict that cheap power will in time attract many industries, bringing new population for the towns and cities and new markets for the products of the farm and ranch.

Wheat grown in Montrose county, on the Howell Brothers farm, took first prize for the United States at the International Soil Products Exposition in Denver in 1915.

There is a sugar factory at Grand Junction and another projected at Delta. More manufacturing plants will bring increased beet acreage, and along with beet raising livestock feeding increases noticeably, the tops and beet pulp being utilized for this purpose. The manure from the stock is put back on the beet land to increase production.

One of the advantages in stock raising is the proximity of summer range in the higher altitudes. Alfalfa and other feeds are grown for fattening, and during the pasture season the herds are taken to the national forests, where for a small fee, the cattle have an abundance of nutritious grazing.

The district is served by the Denver & Rio Grande, the Colorado Midland and various branches of these main roads. There are also splendid auto highways which are being extended and improved every year.

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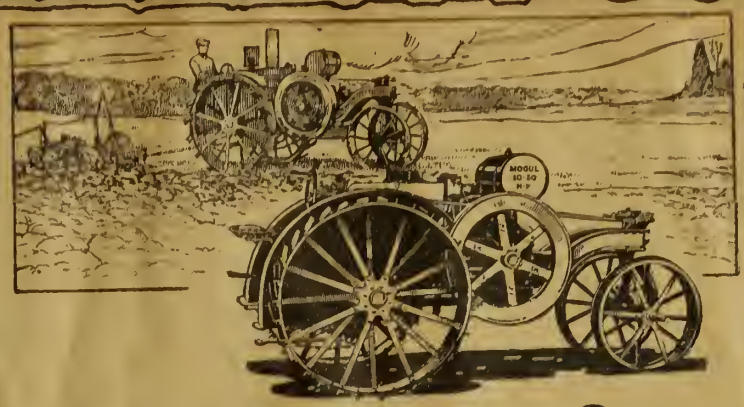

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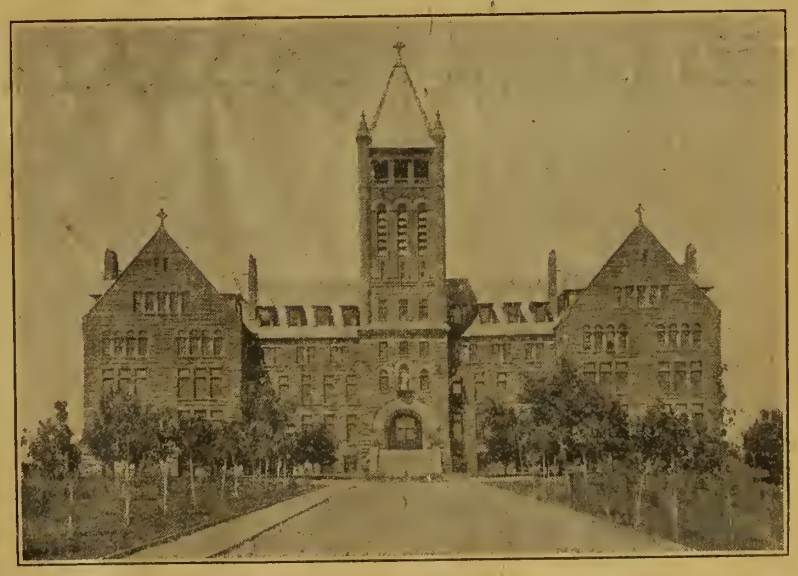

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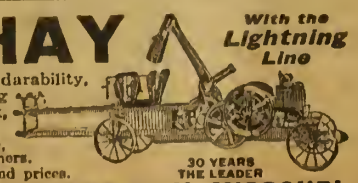

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Our Guarantee—We guarantee the reliability of every advertiser in this journal, and agree to make good to every paid subscriber any loss that may occur through trusting an advertiser who proves to be a deliberate swindler. Notice of the complaint must be sent us within a month of the time of the transaction and you must have mentioned Western Farm Life when writing the advertiser.

Food and Fuel Control

After two months of political wrangling Congress has finally passed the food control bill. This measure is the most far-reaching enactment ever attempted by an American congress. It is solely an emergency war act and will cease to exist with the end of the conflict. It is far more than a food control bill; it gives the president power not only over the production of food necessities, but over fuel; over the manufacture of food products, going so far as to authorize operation by the government of any manufacturing plant, or packing house, when such action becomes a public necessity.

The measure appears to be eminently fair to the agricultural interests. It fixes a minimum price of $2 for the wheat crop of 1918. It exempts farmers, gardeners and farmers' co-operative associations from the provisions authorizing the president to license food distribution agencies. The fixing of a minimum price for next year's crop of wheat insures a large acreage, and farmers are now urged to meet the government half way by planting fall wheat which they are assured will bring them a fair profit.

A feature of the bill that will be of great benefit to the farmers is that relating to coal and coke. Extortionate prices have been charged, even in normal times, in many sections lying not more than a hundred or two hundred miles from large producing coal fields. The power to fix prices on coal and coke is to be exercised by the president thru the Federal Trade commission. This body has already assembled facts and figures and is ready for action when the president gives the word. Undoubtedly the very fact that the government now has this power will result in material reductions of fuel prices. If it does not, farmers' organizations are urged to take the matter up with the authorities.

Another feature of the bill that pleases the country immensely is that relating to the prohibition of the manufacture of whisky and other distilled spirits, which must cease thirty days after passage of the act. It also forbids the importation of distilled spirits into the United States and authorizes the president to commandeer all distilled spirits in bond or in stock, for redistillation for military purposes. Authority is given the president to exercise, if he deems it necessary, to prevent the use of food products in the manufacture of beer and wine. As to distilled spirits, however, the enactment is mandatory and does not await any order from the president.

Herbert C. Hoover has been given full authority to handle the food problem, in co-operation with the Department of Agriculture. The consumer should feel the benefits within a few weeks by a general easing up on the cost of living. The farmer will find that speculative profits squeezed out of food products will make the buying power of his dollar greater, and will have no adverse effect on his net income. The food speculator is now without a friend at court. Let us hope that the law will be wisely administered. Public necessity compelled its enactment, and it will hurt no honest business.

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Only One Side to War

A subscriber asks us to cease sending the paper because of our attitude on the war. He says: "You see only one side of the question, and there are two sides."

He is making a common mistake. The world has long been fooled by a proverb that holds, "There are two sides to every question." Frequent repetition has impressed this upon the popular mind as tho it were literally true, when it can be true only of matters of opinion and theory and never of questions of fact.

War is a condition and not a theory. What goes before the declaration may be a matter of opinion, but when the hour strikes and nations take up arms against each other, the time for argument has passed. Then every loyal citizen of the nation becomes engaged in the war, either morally or physically.

Then every citizen who fails to give either his physical or moral support to the war is disloyal. It makes no difference what personal opinion may be concerning the conduct of the war, concerning abuses creeping out of war conditions; these are and remain in the realm of opinion. When it comes to the fact of war there is no argument, no dispute, no hesitancy. Either we are with the country and for the war, or we are disloyal.

This is not eulogizing war, excusing war, or seeking to make of war something better than it is. Morally and economically war is wrong, and no patriotic sentiments can ever make it right. But when war exists he who makes war, or upon whom it has been thrust, must fight for his life, or suffer the consequences of cowardice. Appalled and shocked we may be with war's results, but when we have made every effort to keep the peace honorably and have failed then we must fight, and every man whose heart is not in his country's cause is lending aid and comfort to the enemy.

We can see only one side because there is no other.

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Farm Loans vs. Politics

Great difficulty has been experienced by the Federal Farm Loan Board in seeking to avoid political considerations in its appointments of directors and officers of the twelve district land banks. The board itself is a non-political body of unusual caliber and ability, and the farmers of the United States who are being served by this board and its twelve district banks, had hoped for no taint of politics. However, political influence is so well entrenched at Washington that the utopian idea stumbled a number of times, and, in at least one instance, suffered a severe fall. This is in the case of the district bank at Sacramento, Cal., where Dr. Elwood Mead, the eminent irrigation expert, and R. L. Douglas of Nevada, resigned as directors because of a disagreement with President White. With the merits of that disagreement we are not familiar, but one circumstance that does not sit well with the farmers of the coast is the fact that President White is a law partner of George Lane, brother of the Secretary of the Interior. This, according to San Francisco papers, indicates the political cast of the appointment.

To our way of thinking this is not so objectionable as the fact that a lawyer was selected as president of the bank. The connection between farm loans and the law may be close enough when it comes to details of title and the like, but provision is made for legal aid in the conduct of the banks, and it would have been far wiser to make the choice of president from among farmers of influence, or at least men in the banking business who are also engaged in farming, as was done in selecting the president of the Ninth district bank at Wichita. The farmer has been pretty generaly ignored in the directorship appointments and such farmers as have been named are largely men whose agricultural affairs are conducted for them by others. However, the borrowers, who in the end are to have their say in the management of the system, are content to get along with the start given them by the national board, awaiting the opportunity when their voice may be heard.

In the meantime there is a disposition on the part of the farm press to constantly remind the directing force of the twelve banks of the fact that the system was created for and by request of the farmers and not the politicians; that so long as it is managed with a view to serving the farmer all will be well, but that no attempt to divert it to political channels will be passed unnoticed. Most of the directors, we believe, have the proper viewpoint, but for the benefit of those who are acting as tho they were directors of a private money-lending concern, or a private bank, let us repeat that they have been appointed as public servants to administer the funds of American investors of all classes and that their responsibility is to the borrowing as well as to the lending public. The farmer has too long been schooled to fear the influence of the financier, and he wants to feel now that the business of financing him is in the hands of his friends. The public is eager to lend its funds on the sterling security of farm lands, and if the administration is far-seeing and fair the system will be a success. If there are many such fiascos as that cropping out in the Pacific coast appointments the system will fail.

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Should Dry Potatoes

Potato growing districts of the Rocky Mountain states should heed the advice of President Lou D. Sweet of the National Potato Growers' Association, who was summoned to Washington as one of the expert advisers for Herbert C. Hoover, United States food commissioner. Mr. Sweet, in a statement recently appearing in the press, urges the establishment of municipal or state drying plants to take care of surplus or undersized potato stock. Here is a suggestion that should be acted on immediately by the commercial organizations of such towns as Greeley, Monte Vista, and other potato shipping centers. Mr. Sweet's statement follows:

"Drying reduces the potato to one-fifth its original bulk simply by the removal of water. Dried vegetables lose nothing in food value save storage space, reduce the tax on transportation facilities and keep well nigh indefinitely in common storage. Particularly as this crop is likely to prove a hard one to carry over because of its generally poor quality, the food administration is inclined to believe that drying will prove a short-cut to saving it.

"We might as well make up our minds that the crop will net the usual penalty for over-production if all the factors concerned in its disposition do not work closely with the government. There are many ways in which this co-operation can be effected.

"There is a dearth of storage capacity; towns and cities should jump into the breach and build municipal storage. This will enable the producers to sell at a figure just to themselves and it will enable the buyer—particularly the poor buyer—to buy as he needs without paying tribute to speculators or middlemen who control a certain amount of storage space.

"Growers and shippers themselves should see to it that the crop is carefully graded and sacked. The practice of filling a sack with culls, bruised and cut potatoes, and dirt, is ruinous in peace times, let alone a national emergency. Unless great care is taken here, there will be carloads of potatoes lost thru rot."

Buying Crops Direct

Mention was made in the previous issue of the effort that is on foot to induce the government to buy staple products directly from producers in Colorado and adjoining states, where population is comparatively sparse and where there will be a large surplus of food crops. The suggestion, which came from Ex-Governor Ammons, has been transmitted to Washington thru several channels, with the prospect that good will come of it. In this connection the following letter to the editor from Secretary of Agriculture Houston will be of interest.

The Department is greatly concerned about the perishable food situation. It wants and needs your help to secure the maximum of consumption and to insure the preservation of surplus fruits and vegetables. It believes that through your aid it will be possible not only to avoid waste but also the discouragement which will follow if the surplus products are not consumed or conserved. The accomplishment of these purposes will contribute directly to the effective prosecution of the struggle in which we are engaged.

You will recall that the president, at the beginning of the war, issued a proclamation urging the planting of food crops. This appeal was responded to not only by the farmers and truck growers, but by dwellers in cities and by residents of the suburbs.

I know that you have displayed a sympathetic interest in this campaign and that, regardless of whether you personally planted anything, undoubtedly you have caused many others to do so.

It is of the first importance that these crops shall not be wasted. They must be consumed locally to as large an extent as possible, thereby lessening the drain on our store of staple products and relieving the pressure upon the transportation agencies. I am sure this thought will appeal to you, and I am relying upon the same interest which you have displayed in the upbuilding of your community to aid the Department in the campaign for the effective utilization and preservation of these crops.

Having complied with the government's request the producers are now hoping for support from the government in marketing the surplus. The plan suggested by Governor Ammons appears to be the most feasible way in which to care for some of the staples, notably beans, of which there will be a quantity far beyond the ability of local markets to absorb. If the producer gets fair treatment this fall he will continue to make extra efforts to increase food supplies, but let us not forget that there is a responsibility on the part of the government, which has advised this extra labor, and extra expense.

If the farmer is compelled to repeat his experience of the present season, he will naturally lose interest in increasing production. We refer to the fact that the average price received for the 1916 wheat crop by the producer was $1.35 per bushel. The man who produced this wheat was compelled to buy back flour on the basis of $3.50 wheat, the difference going to middlemen along the line, as a purely speculative profit. Discouraging experiences of this kind cause the farmer to lose confidence in the ability of his government to protect him. Congress is being watched more closely than its membership is aware of. Failure to take firm action on matters affecting the cost of food will cost many a senator and representative his seat in the national legislature

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Waste Makes Want

It requires the wheat from 470,000 acres to make the flour represented in the bread wasted daily in the 20,000,000 homes of the United States, if each home is chalked up with a waste of only one slice per day. According to the figure sharps of the Department of Agriculture this waste would amount to 875,000 pounds—enough for a million one-pound loaves a day. For a year this would be 1,500,000 barrels, enough to make 365,000,000 loaves.

Big as these figures are they are not exaggerated. Some homes may not waste a slice of bread each day, but unfortunately others make up for this by wasting several slices. One of the gravest faults of this nation is its wastefulness. "Waste makes want," and people are finding it out. It is impressed upon them, not because of the actual pinch of hunger, but thru the failure of their dollars to buy the usual dollar's worth. After making due allowance for exorbitant and piratical profits in food there still remains the fact that if waste were eliminated the high cost would not pinch as it does.

Comment by Farmer Putnam

AT A SUBSCRIBER'S REQUEST HE DISCUSSES SOME RECENT POLITICAL MATTERS

Donvor, Colorado, Aug. 10, 1917.

HERE is a letter I got from one of our subscribers: "Doar Putnam—Please tell us what you think about the United States Senate and about the special session of the Colorado logislaturo and about Congressman Hilliard."

Land alivo! what's tho matter with that subscriber? Does he want to git me in jail fur pollutin' the United States mail with some backwoods Missouri language? Don't he know that a plain-spoken American citizen liko me hadn't oughter be asked to put in print all he thinks, especially when it comes to politics?

You know it's funny about politics. Lots of good men git into office and they does as well as they kin fur the peoplo and wo don't hear nothin' about their performances. When they runs fur office agin somebody starts the story on 'em that they never done nothin' but set still and hold their jobs and they're defeated, while somo foller that's got the gift of gab and no brains to back it is elected by the majority vote.

We ain't perticular enough about the people we elect to send to the state capital or to Washington. Of course, in peace times it don't make so much difference, but when war breaks out it don't take long to uncover the skunks.

I think the trouble in most of them cases where our statesmen hain't been patriotic comes from havin' a paralyzed conscience. A politician's conscience is a different breed than the kind a ordinary man has got. Sometimes, but not often, it stays on straight right thru a political career, but them cases is few and far between. In some cases the conscience gits out of joint by bein' fed on pap and flattery; sometimes it goes wrong from pure cussedness and contrariness, like the mule, which is the official state bird of Missouri. In some cases it quits workin' altogether by bein' put to sleep thru other people's money. I'm not judgin' which of them brands has caused the fuss over the food bill in the U. S. senate, but just statin' the facts and a-lettin' the people draw their own conclusions.

And about Ben Hilliard, why the less said, the better. The best answer to our subscriber was the vote that the people give fur havin' him recalled from the school board in Denver. He kin go back to Washington and say to them other members of Congress:

"Gentlemen, the people who sent me to Washington to represent them in this august body dealt me a body blow on the thirty-first day of July. They said I wasn't fit to be a school director in Denver because I'm agin the war with Germany. I leave it to you gentlemen if it's a square deal to ring in the Kaiser on this little fight in Denver. The poor man has troubles enough of his own without gittin' mixed up in my political fortunes."

Hilliard would be right if he said somethin' like that. The Kaiser don't give a rap about the school system of Denver. He's one of the busiest men in the world right today, and has no time fur ward politics. And I don't think he's buyin' any support in our Congress. If he is he's wastin' his money on mighty poor talent.

Did you ever stop to think what a uninterestin' world this would be if somebody wasn't allus takin' the other side of the questions that come up? We got to stand fur some of this contrariness even in war times, but all I got to say fur them that's contrary is that they're a extra-hazardous insurance risk. The buzzsaw keeps whirlin' round and round and they is lots of suction when she moves fast. By and by some of them fellers that's actin' queer gits drawed right up to the saw and all of a sudden—ZIPP! and their goose is cooked.

Now about our state legislature. Well, neighbor, I hadn't ought to criticize because I didn't go up to the state house and see 'em in action. I'm takin' my reports from the Denver papers, and between readin' all of 'em I don't know where I'm at. One paper sez the legislature is the worst fizzle that we ever had and t'other sez they are patriots and gentlemen. You pays your pennies and takes your choice. I been watchin' state legislatures fur a long time and I come to the conclusion the less we have of 'em the better fur the people. Not but what they does the people good sometimes; in fact some insists they does the people good all the time, but I don't go so fur as that. This here special session done well when it comes to spendin' our money, arrangin' fur a bond issue to pay our huge war debt —which we hain't contracted yet, but will soon if the politicians kin push the good thing along—and plannin' to give us a lot of state constabules to stop auto speedin' and such crimes I reckon. I'm glad we're returnin' to the old constabule system. The publick don't dare monkey with a constabule. I reckon I know somethin' about it because I served two terms in our township back in Missouri, and nary a lawbreaker got outen my clutches without payin' a heavy fine, which me an' the jestis of the peace whacked up on, a part goin' to me fur my fee and payin' installments on my gold star and the rest goin' to the jestis fur makin' out the summonses and payin' fur office rent and janitor service. He kept his offis in his house, so he saved that part, and his wife done all the janitor work. The balance was to go into the county treasury, but between me and the jestis we never could git together on just what the balance was. Holdin' office give me a insight into politics. It hain't no business fur a honest man and I was defeated in the next election by a regular crook.

THOMAS JEFFERSON PUTNAM.

From Experience

The question was given to the class, "Why does a cow need two stomachs?" and little George's answer savored of experience:

"So that when she has an ache in one of them she can use the other."

The Rio Grande Abstract Company

DEL NORTE, COLORADO

When buying land in

Rio Grande County

Insist on an Abstract showing a clear title to the property you are purchasing.

THE SAN LUIS VALLEY

THE San Luis valley, comprising the counties of Alamosa, Conejos, Costilla, Mineral, Rio Grande and Saguache, is one of the most remarkable irrigation sections of America. This valley was, in prehistoric times, a great inland lake. The soil is very fertile and of great depth. High mountain ranges surround the valley on the north, east and west, breaking the force of storms, and giving the district an equable and comparatively mild climate. The elevation of the district varies from 7,000 to 14,000 feet above sea level, some of the best farming country being over 7,500 feet. Protection afforded by the surrounding mountains equalizes the influence of the high altitude.

Water in ample quantity is furnished by the Rio Grande river and its tributaries. These streams rise in the eternal snows of the surrounding mountains and there is always an abundant supply of water for irrigation.

There is little farming without irrigation, but some of the mountain valleys have ample rainfall to insure crops.

The San Luis valley for years was used almost exclusively for grazing purposes, the grass being of exceptional quality and hay meadows furnishing an unlimited supply for winter feeding. The larger ranches, however, have recently been divided up into farms and there has been a considerable increase in the acreage of cultivated lands. A portion of the district is now being provided with drainage ditches that are furnishing an outlet for waterlogged lands which, when drained, will add greatly to the agricultural area.

Artesian water is plentiful in nearly all sections of the valley, furnishing a supply for stock and domestic uses sufficient for all needs.

One of the crops for which the San Luis valley is famous is field peas. This legume thrives in the climate of the high altitude, and makes enormous yields of forage and is used to fatten cattle, sheep and hogs. San Luis valley pea-fed hogs are known all over the west. The peas result in quick fattening and impart a sweet flavor to beef, pork and mutton that brings a premium on the markots.

Sheep raising has decreasod in recent years as a result of tho division of the big ranches, but it is still a big industry in several of the counties. Dairy farming has come into prominence, thero being many good herds of this class of cattle, whore six or eight years ago a dairy cow was seldom seen. While a decrease has been noted in range sheep, thero has been a steady increaso in sheep and lamb fattening with home-grown feeds. In fact, there has been a decided advance from ranch and range conditions to general stock farming.

Alfalfa is one of the big crops, the tonnage being very heavy. Wheat, rye, oats, barley, sweet clover and potatoes are other important crops. The average yield of most of these crops is nearly twice or three times the average for the United States. On the borders of the valley stock raising under the old range conditions is still flourishing, because of the proximity to mountain pasture.

Potato growing has become one of the specialized lines of farming, more than a thousand carloads of spuds having been shipped out of Rio Grande county in 1916. There is a large po-

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The Alamosa Abstract Company

A. R. Sunde, President

Correct and Reliable Abstracts for Alamosa County Property

ALAMOSA COLORADO

514 San Juan Avenue

THE South Platte Valley includes fourteen counties in north-central Colorado and with Denver as its chief center it is the most populous section of the state. Over one million acres of land in this section is under irrigation and intensively farmed, but there is also much idle land, some 600,000 acres belonging to the state and nearly 2,000,000 acres being in national forests. The counties included are Adams, Arapahoe, Boulder, Clear Creek, Denver, Douglas, Elbert, Gilpin, Jefferson, Larimer, Morgan, Park, Summit and Weld. The assessor's books show the total assessed valuation in these counties to sum up $624,030,175, with a revenue from this taxation of approximately $10,000,000.

Mining and agriculture are the big industries, with manufactures and jobbing also holding an important place. This is the great sugar manufacturing district, which boasts of eight factories—seven of them in operation and the eighth about completed. One of the resources as yet only partly developed is the coal, of which there are practically unlimited deposits. This insures cheap fuel for manufacturing purposes and factories mean a market for farm products.

The chief source of water for irrigation is the Platte river, which, with its tributaries, drains the entire region here described. The farm crops grown include wheat, barley, oats, beans, alfalfa, sugar beets, potatoes, corn and sorghum. Truck gardening is an extensive and highly remunerative industry, there being well developed celery districts near Denver, many small fruit farms and hundreds of truck farms where cucumbers, cabbage, onions, tomatoes and similar crops are produced for the big canning plants located in this district.

One of the chief industries, next to sugar beets, is the growing of peas for canning. Colorado's climate and favorable moisture conditions on irrigated lands seem to be specially suited to the production of peas. One big concern operates a home plant with half a dozen subsidiary plants for the canning of peas and other vegetables. Peas, being a leguminous crop, are grown in rotation with grain, and in the Longmont district, which is the center of pea canning, wheat yields of 60 to 70 bushels per acre are not uncommon. In fact, in 1916 authentic reports, checked up by government men, show wheat yields running over 80 bushels per acre under field conditions.

Such remarkable yields are due to a careful system of rotation coupled with the practice of manuring the land and the application of water for irrigation at the exact time when the crops need it. It is this governing of the water in the hands of the irrigationist that makes agriculture an absolutely safe proposition, with attendant high yields.

This same subdivision includes non-irrigated lands of two general classes, according to topography and altitude. In the mountain valleys irrigation is practiced on a limited scale, usually from small streams that pass thru the farm or ranch, and a majority of the crops are grown with the natural rainfall. On the plains, which spread out fan shape in all directions from the eastern slope of the Rockies, the upland portions—that part out of reach of the irrigation ditches—are farmed by what are called "dry farming" methods. On these plains lands the cash crops are wheat, rye and pinto beans, with forage crops to sustain dairy herds, which are found on most farms.

Dairying is carried on both on irrigated and non-irrigated lands in the South Platte valley, under different forms of herd management. Milk condenseries are located at Fort Lupton, Johnstown and Loveland in the irrigated region of the valley, supplied with milk from herds kept on two and three hundred dollar land. These are largely high-grade and pure-bred herds, the Holstein breed predominating. Alfalfa, beet-tops and ensilage are the chief dairy feeds. The herds are kept not only for the purpose of consuming the surplus feeds grown in great quantity on these high-priced lands, but for the benefit of the manure that is returned to the soil, as well as for the income from milk, which is sold at good prices to the condensery.

On the non-irrigated lands the farmer sells cream at the station, there being a steady market and good figures for every gallon offered. This all goes into the manufacture of butter for the general market.

All of the counties above enumerated have both irrigated and non-irrigated farming regions. For example, Weld county, which includes the famous Greeley potato district, also has an enormous area of non-irrigated lands. While Greeley is perhaps best known for its potatoes, it has in recent years acquired fame also as the producing center for seed beans. Some of the largest seed houses of America look to the Greeley district for a supply of beans of various kinds, grown under contract on irrigated land. In addition Weld county has a large acreage of commercial beans; in fact, it has the largest bean acreage of any county in the United States.

Potato culture in the Greeley district dates back many years, but like all other potato sections, there was a setback; a series of years when, from some cause and another, mostly preventable, crops were poor. These causes are now understood, methods of combating potato diseases have been discovered, and the industry is again in flourishing condition. The potato lands are kept in their rich condition by rotation with alfalfa and by the judicious application of barnyard manure.

Larimer county, another of the big agricultural counties of the Platte val-

(Continued on Page 14)

Why Sugar Beets and Beet Sugar

SUGAR BEETS, because they are a safer and better crop; because they are a safer and better revenue; and because such a crop results in more and better farmers.

Sugar Beets are sold at a definite price before even the seed is planted. There are, therefore, none of the marketing difficulties to contend with. The crop is sure of a market at the maximum price.

The intensive culture demanded for Beets puts the land into the finest shape and subsequent crops of grain or other things are always heavier and better.

The Beet crop is attractive because it provides valuable by-products in the form of beet tops, beet pulp and molasses, all constituting the finest and cheapest sort of stock food. Systematic livestock raising in conjunction with a Beet crop will make the Beet farmer speedily independent.

Again, a farmer raising Beets can borrow money to handle his crop much more easily than a farmer in any other line. The banker knows the farmer has a safe crop and that he will be paid for his year's work at a definite time.

BEET SUGAR is a domestic product. It is manufactured from sugar beets grown right here in the West, and is the crystallized product of golden sunshine and silver dew, produced in up-to-date factories in the most sanitary and cleanly way possible.

Beet Sugar is identical with Cane Sugar. All "sugar is sugar" no matter from whence it comes. No expert, or chemist, or anyone else can tell the difference between the two sugars. The Beet Sugar will make jelly or preserve fruit exactly the same as the Cane Sugar. If one fails, the other would fail under the same conditions. The fault does not lie in the Sugar but in the fruit or the technique of the operator.

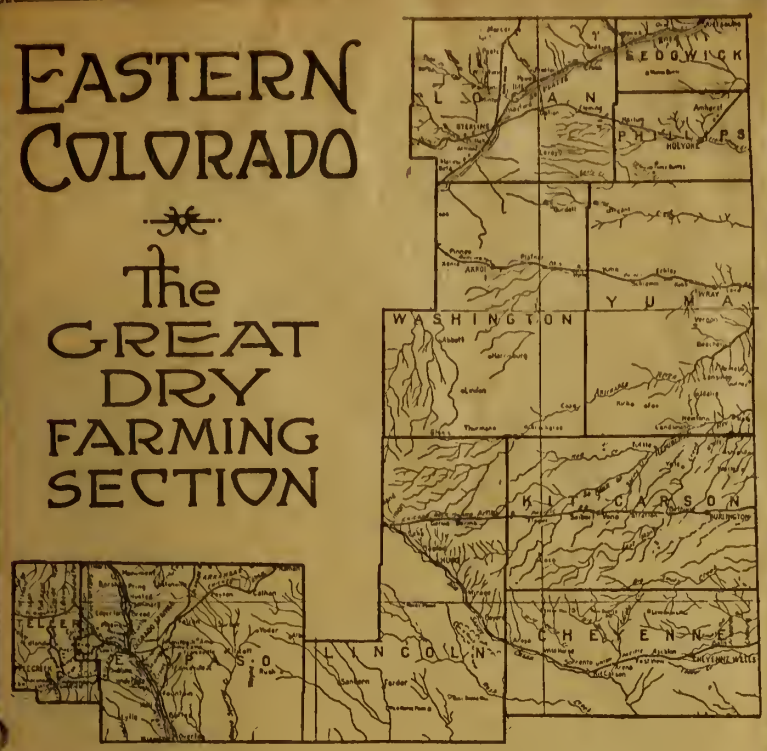
You cannot tell the difference between Beet and Cane Sugar. But use Beet Sugar because it is produced and sold entirely within the United States.

Therefore, Western farmers in sugar factory localities will find it profitable and advantageous to grow beets and to use Beet Sugar. It helps to build up the West; it brings the people in; it makes better and more prosperous communities.

The largest individual producer of Beet Sugar in the country is **The Great Western Sugar Company of Denver.**

EASTERN COLORADO

The GREAT DRY FARMING SECTION



EASTERN COLORADO is an agricultural prairie empire comprising for the most part smooth plow land, with great soil depth and of unusual fertility. This section is described as the dry farming, or non-irrigated country. Farming is carried on under the natural rainfall, which averages from 14 to 20 inches per annum. Drouth-resistant crops are grown and methods of moisture conservation are practised. This combination of methods, with a system based on livestock, makes farming safe and profitable, the returns, when cost of land is considered, being much greater than on the high-priced lands of the east. Many an Eastern Colorado farmer has received more for crops per acre than the land cost him. It is a common occurrence to get a revenue of $35 to $50 an acre from land that, if not homesteaded, has often been bought for $10 to $15 per acre.

Failures on these lands are more often due to an unwise cropping plan than to unfavorable moisture conditions. The section is well adapted to the production of winter wheat, but the man who makes wheat growing his chief business will lose out in a dry season. The safe plan is ample acreage of forage crops, plenty of stock to feed it to, silos to preserve the forage for winter use, and then a portion of the acreage for cash crops, such as wheat or pinto beans.

Eastern Colorado is the pinto bean district. This season it is estimated that at least 150,000 acres have been planted to this profitable crop. Beans have been grown for some years, but first as a rotation crop and not because of their cash value. However, even at 3 cents a pound the farmer found it worth while to grow them, and now that he is getting 7 to 10 cents a pound for his beans, or an income of $30 to $60 per acre, this has become one of the chief money crops.

The counties included in this section are: Cheyenne, El Paso, Kit Carson, Lincoln, Logan, Phillips, Sedgwick, Teller, Washington and Yuma. Desirable homestead land has all been taken up, but there are literally millions of acres of uncultivated land of good character lying idle, held by non-residents. These lands are being rapidly put under cultivation, and in a few years the opportunity for purchasing them at reasonable figures will be gone. Prices run all the way from $7.50 to $25 per acre for raw lands and on upward to $50 for improved farms, the variation being due to location, moisture and soil conditions, etc.

The combined area of the ten counties in the district is 10,945,920 acres, which is greater than the combined area of the states of New Jersey and Vermont. A year ago there was still 260,000 acres of government land open to settlement, but these homesteads have been rapidly taken up, and what remains is for the most part rough pasture land, which is subject, however, to entry under the 640-acre grazing homestead law. In addition there are 845,000 acres of state land, this being sold off from time to time to the highest bidder. Only a small portion of the district is under irrigation, but there is opportunity for considerably more development in this respect, especially in the line of pumping. There are areas that have a strong underflow within easy pumping depth, where water can be raised for irrigation purposes.

Corn and the grain sorghums are grown for both grain and forage, and pit silos are found on hundreds of farms. Practically every railroad station is a shipping point for cream, and there is a big demand for this product from butter manufacturers in Denver, Limon and at Missouri river points. There is much free range and during the summer months, when the cows are on pasture, cream is produced at a trifling cost and high prices are received for the product.

Hog raising has followed dairy farming all over this district, and the Denver market finds Eastern Colorado a constant source of pork. Bean and wheat elevators testify to the fact that the farms produce cash crops.

Water for domestic uses is plentiful and pure, and while running streams are few, there is ample stock water, this having been a favorite grazing ground for cattle ever since the early settlement of the state, fifty years ago.

As in most other sections of the state, there are splendid school facilities, many of the towns of less than a thousand population having high schools built at a cost of forty to fifty thousand dollars.

Consolidation of district schools is making great headway in the rural districts, thus providing for the children of the farm the same advantages possessed by pupils of the city schools. Churches are found in every community. In fact, there has been a healthy, all round development of rural life, and while homes are still far apart, when compared to the eastern and central farming states, this handicap is overcome by use of the automobile. The auto has brot good roads; rural telephone systems are being extended as the country settles up, and rural mail routes likewise.

The pauper sees no use of laws for the protection of what others possess.

For you to keep and use for a month as your own, then agree to show your bicycle to ten or more of your friends and tell them the ridiculously low factory price, easy terms, unusual conditions and exceptional offers I would make, all of which I will explain to you if within ten days from seeing this you will say in a letter or on a postal, "*Send particulars of Bicycle Offer*" and address your postal card or letter:

Would You

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New Issue $1,500,000
The Denver Gas & Electric Light Co.
6% Cumulative Preferred Stock
Dividends Payable Monthly

On the first of each month to holders of record on the fifteenth of the preceding month.

Preferred as to assets and dividends and enjoying full voting rights. Callable at 110 on thirty days' notice. Authorized, $5,000,000. Outstanding, $1,500,000.

ATTENTION IS CALLED TO THE FOLLOWING SALIENT FEATURES OF THE ISSUE

Dividends on this stock are earned many times.

The investment in the Company is largely in excess of all outstanding bonds and preferred stock.

The Company is engaged in supplying gas and electric light, heat and power; and the stability of this business is shown by a continuous growth of earnings over a long period of years.

The City of Denver is among the leading communities of the country, and the total population served by the Company is estimated to exceed 260,000.

Proceeds from the sale of this issue will be applied (a) to the retirement of the $900,000 outstanding bonds of the Lacombe Electric Company, a predecessor company; (b) for extensions and improvements to the property.

Additional Preferred stock can be issued only when earnings are at least twice the dividend requirements on the amount outstanding, plus the stock proposed to be issued.

A highly efficient and progressive management has established a secure earnings position and excellent public relations. The Company is a subsidiary of Cities Service Company, the largest public utility holding company in America.

To stockmen, farmers and others who have idle money we recommend this stock for a conservative investment. Par value, $100 per share. Price, $95 plus accrued dividends. Write us for detailed financial statement and net earnings. We have this information in printed form ready to mail. Address,

WM. J. BARKER & E. SALISBURY SMITH
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Denver, Colorado

The Farm Home

MRS. H. T. FRENCH

Questions about home problems promptly answered by letter and thru the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

JUST FOR TODAY

BREAKFAST

Watermelon Cereal with Cream
Creamed Codfish, Graham Muffins
Coffee

LUNCH

Corn Chowder Sliced Peaches
Bread and Butter Iced Tea

DINNER

Braised Calf's Liver Brown Gravy
Rice Croquettes Succotash
Cottage Cheese and Walnut Salad
Fruit, Ice Cream, Cookies, Coffee

When day after day is close and muggy and our appetites revolt against hot, greasy foods, we turn to salads and ices, and gladly welcome the fruits and vegetables as pleasing change from too heating meats.

Just a few suggestions in menus and recipes that may be used by the busy economical housewife—a little exchange of forethought and planning. Several replies have come to the desk of the editor in answer to the query about salads, but as space has been given to the discussion of salads in a previous number, we must give space to some other equally interesting subjects.

Lima beans are now in full bearing, as is green corn, and both should be frequently seen and eaten. The younger the beans the more delicate and the more easily cooked. Cook them in as small an amount of water as possible, cooking rapidly, adding a little salt, a bit of butter or bacon fat. Save the water in which they are cooked to add flavor to a vegetable soup. If any beans are left after the meal, put them into the sieve or colander, pour boiling water thru them and plunge them into cold water and put away for the salad next day.

Green corn should be carefully husked to insure the removal of all the silk; it should be boiled in salted water from fifteen to thirty minutes according to its age. In preparing it for a soup or pudding the best way is to score each row down thru the center with a sharp knife, then with the back of the knife press out all the pulp. By careful scraping all the pulp may be removed, leaving the indigestible hull adhering to the cob.

One day during these next two weeks procure a good flank steak for Wednesday's breakfast. Cut off and put aside the thin end, chopping and seasoning the remainder in the usual way for hamburg steak; the reserved portion, with the bones, saved from the roast of Sunday, will give a good stock for soup on Thursday. And doubtless, by management enough scraps of meat and vegetables have been kept put away from previous meals that a fine hash may be served for supper, with the following good old-fashioned corn muffins: One cup flour, ½ cup corn meal, 3 teaspoons baking powder, 1 tablespoon sugar, ½ teaspoon salt, 1 egg, 1 cup milk, and 2 tablespoons butter. Bake in gem tins.

Berry Roly Poly.—To make a roly poly, mix together 1 pint of sifted flour, a half teaspoonful of salt, 1 teaspoonful of baking powder, and rub in two teaspoonfuls of lard or drippings or butter. Stir to a soft dough with sweet milk, roll out, spread thickly with berries and a few spoonfuls of sugar, roll up tightly and pinch the ends together. Arrange on a greased pan and steam for half an hour, then place in a hot oven just long enough to dry off the crust. Serve with cream dip or a hard sauce, coloring part of it with a few crushed berries. If one cares to take the time the colored part may be squeezed thru a cornucopia, over and around the white portion, which is heaped on a flat dish. (To make a cornucopia, shape a triangle from a sheet of writing paper and cut off the tip with sharp scissors.)

Berry Turn Overs.—Cut off a portion of the milk biscuit dough used for breakfast and place it on ice. At noon time roll it out quite thin, cut in large circles, on each put a spoonful of berries and a little sugar, double over the dough and with thumb and fingers crimp the edges together. Brush each with milk, bake in a hot oven and serve before they cool, using hard sauce with them.

Melons—In the Menu

Thruout this month melons of all kinds are plentiful, and when well chilled make a cooling and acceptable dessert. When preparing a watermelon cut in half crosswise (either straight or in points), then take a slice from the ends so that each half will stand upright on the platter. In serving it may be cut down from center to edge in wedge-shaped pieces, or scooped out with a spoon.

Cantaloupes should be iced before opening; to fill the cleaned centers with ice results in robbing them of a large part of their spicy flavor.

Iced Coffee—This is a cold drink much enjoyed by many. When making coffee for breakfast, plan to have left a pitcher of clear, strong coffee. When desired later in the day or next day, sweeten it very slightly and chill, and serve in glasses in which has been placed a spoonful of ice cream or a spoonful of whipped cream.

Corn Pudding.—A generous and delightful corn pudding will need two dozen young ears. Score and scrape all the pulp, mix with it a cupful and a half to a pint of milk, according to the juiciness of the corn. Add two well beaten eggs, two tablespoons of flour, one quarter of a cupful of melted butter, one teaspoonful of sugar and salt and pepper to taste. Pour into a well-greased earthen dish and bake in a slow oven for two hours.

Braised Beef Heart.—Inexpensive and delicious. Wash the beef heart very thoroly, cutting out the tough arteries and top lobe. Fill with bread stuffing, strongly seasoned with onion and rich with chopped suet. Lay in deep earthen or aluminum dish with tightly fitting cover, pour in a cupful of well seasoned strained tomato, cover and cook for four hours in a moderate oven. Uncover for the last half hour that it may brown slightly Next day cut what remains in very thin slices and serve with tobasco or any highly seasoned table sauce. (These dishes that require early preparation and long cooking will be appreciated by the busy housewife who has the fireless cooker, or who is busy with canning requiring long cooking on the top of the range).

Scalloped Tomatoes and Corn.—As an accompaniment to the heart mix together a pint of raw corn scraped from the cob, a pint of firm tomatoes skinned and cut fine, a teaspoonful and a half of salt, one-third of a teaspoonful of pepper, one teaspoonful of sugar and two tablespoonsful of flour. Turn into a buttered dish, cover with buttered crumbs and make for three-quarters of an hour.

Cauliflower.—Cauliflowers should be trimmed and soaked in salt water, head downward, for three hours before boiling; this will dislodge any insect which may be hidden among the flowerets. Boil in salted water, stem downward, just long enough to cook the central stalk tender.

Drain thoroly and serve with either a cream sauce or drawn butter. Any portion left is delicious as a basis of a cream soup; or the flowerets may be rinsed with boiling water, drained, chilled and added to a vegetable salad.

Diversion.—If you have in your garden sweet peas, nasturtiums, bachelor buttons, pansies, or any flower that blooms profusely, pick them. From the time the first flower comes to the end of the season, pick and enjoy them, if you would have plenty and to share, for no matter if the individual dies, nature has planned it that the species shall not perish, and the more you pick the greater the determination of nature to perpetuate the kind, and bloom after bloom is sent forth to take the place of those which have been taken, and from these we learn that great truth—"To him that hath shall be given."

Note.—One of our readers asks for an article on the uses of watermelon rinds. The article will be given in the columns of September 1st. Watch for it.

The Orphaned Lambs

Here is a picture of myself and my three pet lambs. Their names are Smoky, Goatee and Monkey Face. They are all orphans. Their mothers died in one of the big storms we had this spring. Lots of farmers and sheep owners around here lost half

Troy Feeding the Orphans

of their sheep during that cold, stormy weather. My papa kept his sheep in sheds at night and in a forty-acre field during the day time, and by feeding them well he kept most of them alive.

I feed my lambs three times a day, and if I have good luck with them I will either sell them this fall and start a bank account, or will trade them to Daddy for ewes and start a sheep herd of my own. Will watch for my picture in Western Farm Life.

Yours truly,
TROY PINKERTON WALKER,
Redmesa, Colo.

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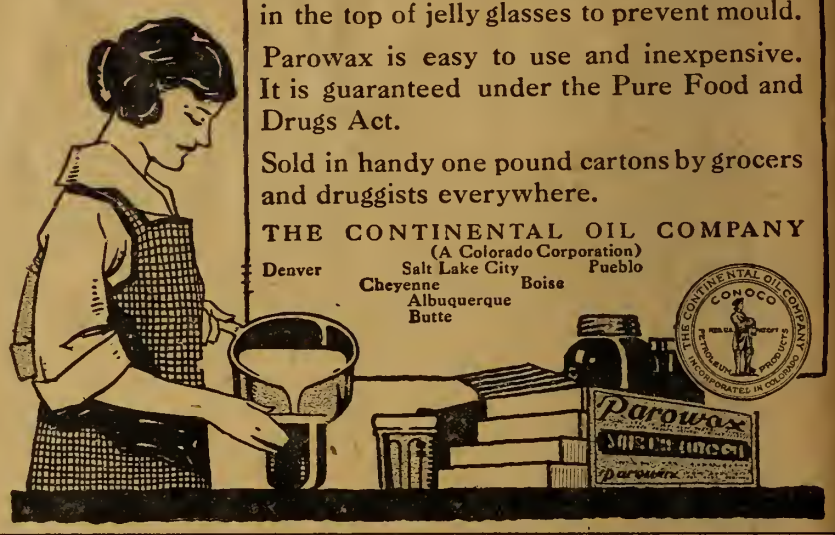

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THE ARKANSAS VALLEY
SOUTHEASTERN COLORADO

The HOME of the ROCKY FORD MELON

THIRTEEN counties are included in the district known as The Arkansas Valley, namely, Baca, Bent, Chaffee, Crowley, Custer, Fremont, Huerfano, Kiowa, Lake, Las Animas, Otero, Pueblo and Prowers. Some of the territory mentioned lies in the mountains and is typical of high altitude farming, but a large proportion is adjacent to the Arkansas river, which rises in central Colorado and flows in a southeasterly direction, thru a wide valley, easily irrigated from the stream and its many tributaries, where the soil is fertile and adapted to a great variety of crops.

Large storage reservoirs supplement the stream irrigation and greatly extend the use of water, which after passing from farm to farm again finds its way into the stream to enrich the country lower down.

The total assessed valuation of the thirteen counties included in this division is $226,912,479, with a net taxation revenue of nearly $5,000,000. By far the larger portion of this valuation is in the lower or valley counties of the district, where the oldest farming region is located. The district is by no means all agricultural. In fact it includes some of the richest coal mines in the West, as well as the great steel mills of Pueblo. These mines and mills call for a large population of workmen dependent upon the surrounding country for their food products, thus providing a good local market.

While development in the irrigated section dates back many years, there is yet available for cultivation something like 5,000,000 acres of agricultural land as well as a vast area of grazing land. Opportunities for new settlers are inviting, especially on the non-irrigated lands.

No other section of the state has experienced such an influx of settlers as has this district in the last two or three years, hundreds of new families going on farms in Las Animas, Bent, Baca, Prowers and other counties

Melon growing is one of the lines of specialized farming that has brought fame for the Arkansas valley. Rocky Ford, the home of the cantaloupe of that name, is a prosperous agricultural center that by no means depends for its prosperity on one crop. Melon seed production, alfalfa seed production, the growing of beans for seed, etc., are other highly remunerative branches of farming followed by specialists who have made a study of conditions and know how to take advantage of the favorable climate to produce the highest grade of seeds.

Alfalfa is one of the big money crops; sugar beets another. There are several sugar factories in the lower valley. Alfalfa is cut four times and sometimes there are five cuttings. This season the farmers were getting $12 to $15 a ton for alfalfa in the stack in midsummer, when hay is usually plentiful and low priced. Alfalfa meal mills were grinding up every ton of surplus for stock food, to be sold during the coming winter in the centers of population of the east, or supplied to the army.

Dairy farming has experienced a wonderful growth in the last three years. A condensery located at Lamar has brought nearly 3,000 high grade and purebred dairy cows into that section. Another big condensery is being built at La Junta. A new and flourishing dairy district has been built up around Holly. This dairy development is incidental to general farming, which was already in a flourishing condition. The immense quantities of alfalfa and other feeds grown provided a favorable opportunity for converting crops into milk at a good profit. The manure was needed for the land, and thus, while making the farm more fertile, the farmer, with some extra labor, is providing himself with a revenue that is constant the year round. No surer proposition could be imagined than a well-conducted, irrigated farm, with several cash crops and dairying and hog raising as side lines. This combination is making many farmers of the Arkansas valley wealthy.

Improvements on farms and in town have kept pace with development of the land. The schools are excellent. There is every convenience found in any of the older sections of the country and better and costlier farm buildings. Appearances are in full keeping with the character of lands and size of the investment necessary for conducting a good irrigated farm.

Bordering the irrigated region of the lower valley and on up into the higher sections of the mountain counties, are found great stretches of dry farming land in a high state of cultivation, yielding grain crops of various kinds and forage for the dairy herds.

In Fremont county we have the Canon City fruit district, a region es-

(Continued on Page 15)

Mount Saint Scholastica's Academy

CANON CITY COLORADO

Boarding School for Girls

For particulars address Sister Directress

BIG GAME RIFLES and METALLIC CARTRIDGES

A SPORTSMAN often has to travel a long distance nowadays to get a shot at big game.

The Remington UMC Big Game Rifle (*whether slide action, hand operated repeater or the autoloading model*) will take care of any kind of game found on this continent. Handles easily—is as comfortable to carry as to shoot—is free from delicate parts and complications.

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You may be certain of big profitable crops if you adopt the most up-to-date method of seed grain treatment as recommended by the U. S. Dept. of Agriculture—

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The Farmer's Friend

This powerful disinfectant destroys grain smuts, rust and fungus growth. It prevents flax wilt, also scab and black-leg diseases of potatoes. It rids stables and chicken houses of disease germs and flies. Formaldehyde is surely a great boon to the farmer. Our Formaldehyde at your dealer, 35 cents in pint bottles will treat 40 bushels of seed. Big illustrated Hand Book sent on request—free.

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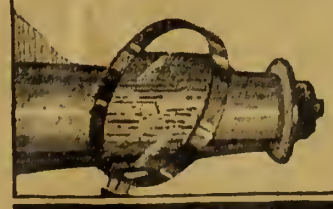

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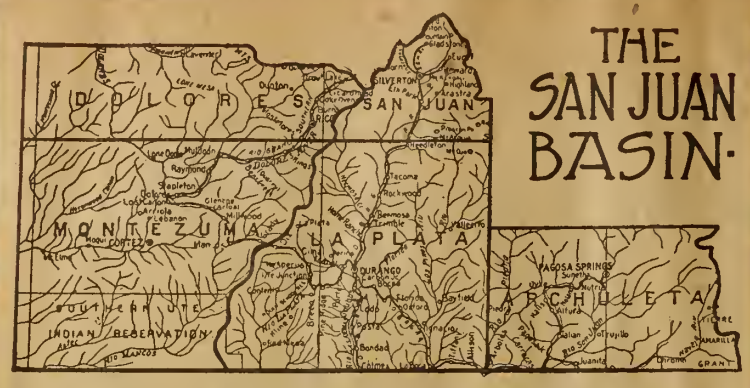

SOUTHWESTERN COLORADO

SOUTHWESTERN COLORADO, comprising the counties of Archuleta, Dolores, La Plata, Montezuma and San Juan, has been known heretofore principally as a mining region. It is extremely rich in precious as well as base metals, and has contributed millions of dollars to the wealth of the world. Its great agricultural possibilities have, until recent years, been generally overlooked. One reason for this was the remoteness from large markets. This handicap is being overcome by building up local markets in the mining camps, developing local manufacturing and putting the country on a self-sustaining basis.

The agricultural lands are of great fertility. Part of the section is adapted to farming without irrigation, but irrigation is generally practised. There is still considerable government land available for the homesteader and privately owned lands are on the market at low figures.

Durango, the largest city in southwestern Colorado, is situated in La Plata county, and is the mining, smelter and agricultural center of the district. La Plata county has about 200,000 acres of idle grazing land, much of which will come under the plow, to be farmed without irrigation, as the natural rainfall is ample for most crops. In the irrigated sections of the county alfalfa, grain of all kinds, potatoes and all sorts of fruits and vegetables are grown. The yields are as heavy as in any other irrigated region of the state. Prices of irrigated land, with good water right, range from $30 to $100 per acre and dry farming land is quoted at from $5 to $25, while strictly grazing land is to be had as low as $3 per acre. This range of prices governs also for the other counties in the district.

Beef cattle, hogs and sheep are all paying industries and dairy farming has made considerable progress in the last three years. The mining camps in the higher portions of the district are forced to depend upon the agricultural regions for sustenance, or pay high for products hauled across several mountain ranges from the eastern slope. Revival of the mining industry, which is now going full blast, has caused a great demand for foodstuffs, and the farmers are busy supplying their home markets. The greatest success in farming, however, is found in sticking to feed crops and putting them into livestock, which can be marketed at a distance if local markets do not absorb it.

Fruit growing and potato production are two paying lines, dependent upon market development before taking their proper place among the branches of agricultural industry. There is prospect of a sugar factory for the district. Experiments made with beets have shown that they can be satisfactorily grown. Another prospective industry is a wool scouring plant, which Durango is backing, because of the extensive sheep country tributary to that city.

Montezuma county is the home of the Ute Indian reservation, covering a large area, on which there remain, however, less than 500 Utes, most of them engaged in agriculture. In this county are located the Cliff Dwellings, which were the home of a prehistric race of peaceful agricultural people who have left monuments and mementoes of various kinds attesting their industry. These ruins are embraced in the Mesa Verde National park, which is annually visited by a great many tourists from all parts of the world.

Archuleta county, the most easterly of the counties comprising the San Juan country, is chiefly noted for its livestock; cattle, sheep and goat raising being the chief occupation of the farmers. There is considerable irrigated land on which alfalfa and grain crops are grown.

Dolores county, the most sparsely settled county in the state, offers opportunities for new settlers on stock raising homesteads. There is also a limited amount of good agricultural land still open to settlement. Coal and other minerals are to be had in unlimited quantities, but these resources are awaiting the influx of population for development. Land values are at the minimum, and the man who likes pioneering may find his opportunity in Dolores county.

The San Luis Valley

(Continued From Page 9)

tato acreage this year, with prospects for a full crop and higher values even than last season. Potatoes of the high altitude country not only are of unusually fine flavor and texture, but the per acre yield is three times that of the general farming districts of the eastern states.

San Luis valley farmers are strong for organization. Several large National Farm Loan associations have been formed this year and thousands of dollars will be loaned to farmers thru the federal farm loan system in the next few months, this money going into farm improvement and the development of more acreage. In one portion of the valley the hog producers maintain an effective organization to fight all hog diseases, engaging a veterinarian by the year to inspect and keep the hog farms free from contagion of all kinds. High standards have been set for the products of the San Luis valley and agriculture is carried on scientifically.

There is room for more farmers. Thousands of acres of land are still to be drained and made fit for farming; other thousands of acres, in the higher reaches of the valley, will be brought under irrigation and there are some opportunities also for non-irrigated farming. Land values vary according to conditions, and prices rule extremely low, when the advantages are considered. Figures given by the State Board of Immigration quote irrigated lands, including water right, at $40 to $100 per acre, while non-irrigated land is for sale at $5 to $25.

North-Central Colorado

(Continued From Page 10)

ley, borders upon one of the Platte's tributaries, the Cache la Poudre. This county has long been famous for its fat lambs. Fortunes have been made in lamb feeding, which is a side issue on the big irrigated farms, utilizing the alfalfa and other feeds.

Good roads, splendid educational facilities, telephone and rural mail lines, railroads and interurban lines are found in these rich valleys. Nowhere in America has farming reached a higher point of perfection and nowhere may a better class of citizens be found on the farms. And the opportunities are by no means lacking for additional population, even in what are now considered thickly settled portions of the region. Many farmers on 160 or 200 acres of land find themselves with too much acreage. These farms are being divided up, because a forty gives ample support to a farm family, with the promise of wealth in a few years, when properly managed.

Purebred Percherons That Never Taste Grain

(Continued From Page 4)

feeding that is usually employed in the growing of fine horses. The weight of the mares seems almost incredible. Six selected from one hundred brought up for inspection averaged 2,100 pounds each.

Mr. Gammon commissioned the officer to purchase for him on his return to France the best two-year-old stallion obtainable. Such introductions of new blood from time to time, combined with the ranch pastures with alfalfa hay in winter, give the colts the best of constitutions.

The summer pastures are located in the Big Horn Mountains, 7,000 to 8,000 feet above sea level. Here the succulent high altitude grasses provide an abundance of forage for seven or eight months of the year. Here the colts follow their mothers, getting the feed and the exercise that make them such fine horses. The winter pastures are at an altitude of about 4,500 feet above sea level. Here they are fed on alfalfa hay, that great forage which gives bone and muscle to the young animals as no other feed will do.

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Buy your Holsteins and Percheron Horses AT HOME. Colorado Acclimated.

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Write Us About Financing Your Cattle Business

Count Majesty Is Dead But I have two or three of his sons out of splendid cows that are excellent prospects for herd-headers; better secure one of them before they are gone. His sons are good—his heifers the finest prospects I ever saw. **Majesty Oxford Combination** now at head of herd.

In Durocs, have a litter (13) out of a daughter of Model Critic, by a son of Grand Model, that are good.

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HOLSTEIN, JERSEY, AYRSHIRE, SHORTHORN

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C. F. BURKE, Rocky Ford, Colo.

JACK MEN, LISTEN

I have the largest 6-year-old jack west of the Missouri River for sale. Other bargains in Mammoth jacks and jennets.
Inspection Invited — Satisfaction Guaranteed

W. H. WHEELER, Garden City, Kan.

NORTHWESTERN COLORADO, with an area of over 12,000,000 acres, is as big as throe eastern states, one county alono being about the slze of Connecticut. The counties classed with this section are Eagle, Garfield, Grand, Jackson, Moffat, Pitkin, Routt and Rio Blanco. Only a million and a half acres of this great territory is in private ownership and about one-third of that is under cultivation. Over five and a half million acres, or forty-five per cent of the entire area, is classed as government land open to entry, in addition to which there are some three million acres of forest reserve in control of Uncle Sam.

While much of the government land is rough and mountainous, there are, nevertheless, thousands of acres of desirable homesteads still to be had, either in mountain valleys or on the sagebrush mesas. The principal reason for lack of development is the fact that the northern part of this section does not possess adequate transportation facilities. The Denver & Salt Lake railway passes thru Grand, Moffat and Routt counties, and it is planned, eventually, to extend the road to Salt Lake City. The southern counties in the district are served by the Denver & Rio Grande and Colorado Midland. There is a railroad outlet for Jackson county to the northward into Wyoming, by means of the Laramie, Hahn's Peak & Pacific railway.

Grand and Jackson counties are largely devoted to stock raising, tho there is some general farming with irrigation from the numerous streams. Hay is one of the best crops, the native grasses being not only nutritious but yielding an enormous tonnage. The grassfed cattle from Middle park and North park, situated in the two counties above mentioned, are famous at the big markets and have often won first prizes at the International as well as the National Western stock shows.

The famous Carbondale potato district is located in Garfield county at the foot of Mt. Sopris. This district is known wherever potatoes are grown, as possessing a typical potato soil, and a location and climate that most nearly approximate the natural home of the potato. Yields of over 500 bushels to the acre are not uncommon in this district, and scientific culture of potatoes is carried on to such a point that United States government potato experts visit the fields two or three times a year to observe the progress of crops and of experimental work there carried on. Carbondale is the homo of the Sweet ranch, conducted by Lou D. and Frank E. Sweet, the first named being president of the National Potato Growers' Association and a member of Herbert C. Hoover's food administration force in Washington at the present time.

There are many as yet undeveloped mountain valleys, perhaps as well suited to potato culture as the Carbondale district. The opportunity for production of selected seed is especially favorable. This requires special knowledge and large capital, but offers opportunity for correspondingly big returns.

Dairy farming has made great headway in some parts of this district, the product being used for the manufacture of cheese and butter. The mountain valleys offer opportunities that duplicate those which exist in Switzerland, with this favorable difference, that land values are very low and large areas of pasture are available for free grazing.

A Day With Farmers of School District 13

(Continued From Page 3)

having already practically accomplished what the Department of Rural Education is advising in all communities where conditions indicate the need. The cross-fire of questions and answers that followed the lecture indicated intense interest in better educational facilities and the determination, on the part of patrons, to make the school of District 19 a model of its kind.

Improve the Grounds

The next step undoubtedly will be improvement of the school grounds and the sinking of a well, which will make trees and shrubbery possible. State Forester W. J. Morrill will be glad to give his aid in making a plan for permanent improvement of school grounds and he may be called upon by District 19 to help.

Roy Marple, secretary of the Cope National Farm Loan association, attended the meeting, and he was asked by the farmers to tell them something about the federal farm loan system. This he did quite willingly, making the point that the system offered every farm owner a chance to build a good home on money borrowed thru the government on long time. He declared that, too often, home surroundings in Eastern Colorado were not in keeping with the general productivity of the farm, as farmers were in the habit of putting off home building and improvement.

There was an attendance of nearly 150 farmers and their families. They left their farms for an entire day during the busy season, but there wasn't a man of them who regretted it, because the social contact, good-fellowship and the practical as well as inspirational talks, were worth more for the future than the manual labor of one day. Behind the scenes was the county agriculturist, Paul N. Flint, helping to keep the program moving, but letting the farmers "run the meeting." It was an example of co-operation and neighborliness that left in the guest's heart a sincere desire to go back some other day and visit with his friends of the plains country.—A. T. S.

The Arkansas Valley

(Continued From Page 13)

pecially favored by soil and climate for the production of apples, peaches, pears, plums cherries and small fruits, with dairying and general farming on the increase, as is the case in other districts formerly almost exclusively devoted to fruits.

In Pueblo county, especially in proximity to the city of Pueblo, there is a large truck growing region, famed for its celery and other special crops. In this county, also, the dry land farmers are turning from exclusive grain farming to a livestock basis.

The counties of Huerfano and Las Animas have in addition to large areas of plains lands, several well-defined farming valleys in the mountain districts, where large ranches are giving way gradually to the smaller and better paying farm.

Thousands of farm families can still be accommodated on the wide reaches of the plains counties in this district, where lands are low priced, and opportunities for home-making good. Most of the government land on the plains has been taken up. Privately owned lands now held in large properties, or in quarter and half sections by non-resident owners, are quoted at $8 to $20 per acre.

Farmers' and Stockmen's Exchange

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WANTED—TO HEAR FROM OWNER OF FARM or unimproved land for sale. O. K. Hawley, Baldwin, Wis.

WANTED TO HEAR FROM OWNER OF GOOD ranch for sale. State cash price, full description. D. F. Bush, Minneapolis, Minn.

WANTED—TO HEAR FROM OWNER OF GOOD farm for sale. Cash price, description. D. F. Bush, Minneapolis, Minn.

RANCH FOR RENT, 9 MILES EAST OF PINON, 16 miles northeast of Pueblo. Mrs. Jessie Spencer, Pinon, Colo.

WANTED TO HEAR FROM OWNER OF GOOD farm for sale. Send description and cash price. Co-operative Sales Agency, Minneapolis, Minn.

166 ACRES HIGH, DRY RIVER BOTTOM land; covered in switch cane; cattle need no feed during winter; feed on the cane; one of the best stock farms anywhere. Price, $20 per acre. Henry Clay, Winthrop, Ark.

NEW 160 ACRE FOOTHILL FARM, 25 ACRES cultivated, 105 acres more tillable; good house, barns, corrall; running water, sawmill, plenty of timber, steady business; farm tools, team, wagons, blacksmith outfit, good stock range. Bargain for cash. Address owner, E. Quackenbush, Paonia, Colo.

400 ACRES—NO. 1 FARM; 325 ACRES IN CULtivation; at edge of prairie. One of the richest districts in county, with good house, large barns, also tenant improvements. An ideal home; good shade; close to river; fine stock and grain farm, 50 acres. You will like it. Come or write W. W. Tracy, Anderson, Mo.

JUST RETURNED FROM SOUTH AMERICA—Aranged for million acre grant; organizing cattle company. Want members join organization who are given 2,000 acres and stock in company for less than 5 cents an acre. Want 60 to 70 members to go to work on ranch. Highest reference. J. B. Shoenfelt, Woodstock, N. Y.

ALFALFA IRRIGATED RANCH—ALFALFA IS now selling to the alfalfa meal mills at $15 per ton on contract for the season crop, which makes four to six tons per acre. Can sell you well-improved farm, 80 acres, half mile meal mill, Nine Thousand Dollars. Best of water rights. Have other bargains. W. R. Connelly, Hartman, Colo.

WANTED TO LEASE—A GOOD SMALL STOCK ranch. Must have plenty of hay, some outside range or pasture with shelter and buildings in good condition. Not too far from shipping station; prefer northwest of Denver. Will pay cash rent with option to purchase. Write full description with location, price, etc. E. G. Hoyt, Buckingham, Colo.

240 A. GOOD LEVEL WHEAT LAND IN Weld Co., 8 miles from Briggsdale, all fenced, good well, young orchard, 85 A. broke, 60 A. cropped this year; $15 acre on easy terms. Two good half sections adjoining, improved, 2 miles from Osgood, $15 A., one-half cash. A few mountain places. Get my list and map. Mackley, 1643 Champa, Denver.

DOWN THE PLATTE RIVER, 160 ACRES choice land with full paid up old free water rights, $75 per acre. Near Littleton, 35 acres in alfalfa and wheat, full water right, nearly new and substantial buildings, flowing artesian well, improvements cost $10,000. Land, crops, buildings, all for $10,000. Sydney C. Osmer & Co., 308 15th St., Denver, Colo.

480 ACRES, 16 MILES FROM DENVER, fenced, all in wheat, $20.00 an acre, $2,000 in cash, balance at $500 a year; 320 acres, small house, stables, good windmill, fine well, fenced, 120 acres cultivated, including cattle, horses, machinery and implements, $8,000, one-fourth cash, two and one-half miles from good town. Wolf-Rankin Realty Co., 324 17th St., Denver, Colo.

2,560 ACRES—FARM AND STOCK RANCH, right close to Denver, on state highway; new house, barn and outbuildings; all fenced; creek crosses one corner; 2 wells; land all well grassed; 1 section runs 150 head of cattle, fat beef on this pasture now; 400 acres in cultivation; worth $50 per acre; owner says sell at $25; will give 10 years' time at 5 per cent on large part; let me show you this soon; it is at Denver's door. O. W. Lovan, 504 Colorado Bldg., Denver, Colo.

COLORADO LAND EXCURSION—50,000 ACRES to be sold by Trustee, in any size tract to suit purchaser. Crop Payments. One-tenth cash, balance ten yearly payments, but only two-fifths crop and taxes required first four years; fertile soil; irrigated by splendid irrigation system; good roads, schools, markets; delightful climate; within few miles of Denver. Come see the great crops of wheat, alfalfa, sugar beets, vegetables and fruits now growing on these lands; come see the dairy and hog ranches and poultry yards. We also offer as trustee several thousand acres splendid non-irrigated land near Denver on easy terms. Low excursion rates. Railway fare refunded to buyer. Send for literature. Chicago Title & Trust Co., Trustee, 707 Ideal Bldg., Denver, Colo.

I HAVE SOME CASH BUYERS FOR SALABLE farms. Will deal with owners only. Give full description, location and cash price. James P. White, New Franklin, Mo.

GOVERNMENT LANDS

GOVERNMENT LAND. FREE BOOKLET. JOseph Clark, Sacramento, Cal.

POULTRY

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QUALITY DARK CORNISH, THE IDEAL FARM fowl. W. W. Officer, Fowler, Colo.

QUALITY DARK CORNISH—UTILITY AND exhibition stock for sale. R. H. Jandebeur, Alma, Neb.

A FINE LOT OF VIGOROUS, EGG-BRED S. C. W. Leghorn cockerels for sale. They will improve your flock. Rowley Egg Farms Co., Palisade, Colo.

S. C. BUFF ORPINGTONS—COCKS, COCKerels, hens and pullets. Get my prices and breed Orpingtons. F. M. Shank, Route No. 2A, La Junta, Colo. State Vice-President National S. C. Buff Orpington Club.

IF YOU DON'T FIND ADVERTISED HERE what you want, write our classified advertising department and they will be glad to place you in correspondence with the right parties.

LIVE STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

CATTLE

HOLSTEIN CALVES—TWELVE HEIFERS AND two bulls, 15-16th pure, four to six weeks old, $20 each, crated for shipment anywhere. Fernwood Farm, Wauwatosa, Wis.

REGISTERED HEREFORD BULLS FOR SALE; one bull, Bonnie Lad 20th 355369, twenty months old. Good individual. Three yearling bulls. Write for full particulars and prices. Fontaine & Weedin Ranch, Galatea, Colo.

REGISTERED JERSEYS AND MILKING SHORThorns. Jersey herd headed by Maggie's Shy Duke, 140084, Grand Champion Denver Stock Show. Two nearest dams average 54 lbs. milk per day. Shorthorns headed by Independence Lee 427351. Two grandams average 9023 lbs. milk in one year. The Hinman Silo Co., 1650 Champa st., Denver.

HOGS

BIG BONE POLAND CHINA BOAR PIGS, REGistered, $15.00. Barney Bros., Haswell, Colo.

REGISTERED, BIG TYPE DUROC JERSEY hogs for sale. Edgemoor Farm, Littleton, Colo. Caldwell Martin, Owner.

MISCELLANEOUS

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SWEENEY SURE CURE—MONEY REFUNDED if not cured. H. Howetter, R. F. D. No. 1, Box 23, Calhan, Colo.

FARMERS AND STOCKMEN — IF TROUBLED with Loco Weed, you can kill it with our Loco Killer without chopping or digging. Also want men to handle territory. If interested, write Western Mfg. & Trading Co., 1543 Glenarm, Denver, Colo.

BUSINESS CHANCES

FOR SALE—SPLENDID PAYING NURSERY business in rich growing West Texas plains country. Two miles from Plainview, 160 acres good land, improved and equipped with large and complete stock of varieties adapted to this climate. Stock will retail for more than enough to pay for whole place and improvements. Well improved and equipped for irrigation. Price Forty Thousand. Have been doing a sixteen thousand dollar business every year. Reason for selling is bad health. Plainview Nursery, Plainview, Tex.

BEE SUPPLIES AND HONEY

BEE SUPPLIES OF BEST QUALITY. SEND for 68-page illustrated catalog. We also sell Comb and Extracted Honey. The Colorado Honey Producers' Association, Denver.

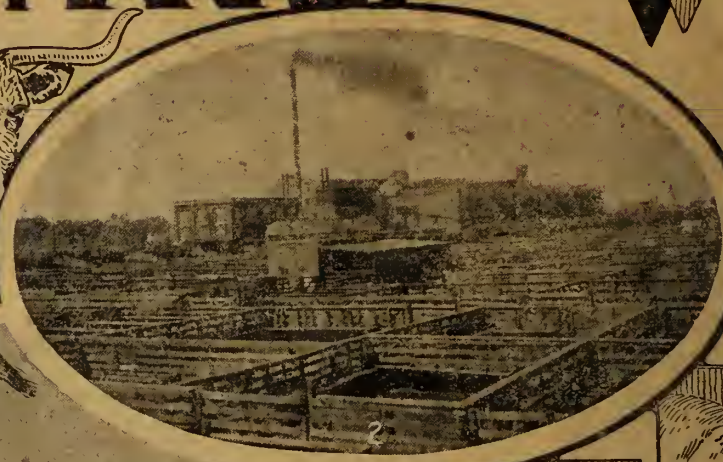
KODAKS

KODAKS, CAMERAS, PHOTO SUPPLIES—Fords, the best kodak store, 1029 16th St., opp. old P. O., Denver, Colo., for Eastman Kodaks, all makes cameras, films, photo supplies; develop any size roll films, 10c; print pictures, 3c each and up; mail orders solicited; kodak and camera catalogue mailed free upon request. Mention this paper.

PATENTS

WE BUY AND SELL PATENTS. INTERNAtional Pat. Co., 583 Brandeis, Omaha, Nebr.

SHIP YOUR LIVESTOCK TO THE DENVER MARKET



The Highest Market Most of the Time

The Best Market all the Time

1. Swift & Company Packing Plant, Denver
2. Plant of the Colorado Packing & Provision Co. (Armour & Co.), Denver
3. The New Live Stock Exchange Building, Denver Union Stock Yards

Consign Your Stock to Any of the Following Commission Firms

Exchange Building, Union Stock Yards, Denver, Colo.

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A. A. BLAKLEY, Manager
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American Commission Company
J. DUNCAN McKEE, Salesman
Suite 308 — Phone Main 2240

Clay, Robinson & Company Live Stock Commission
Chicago, South Omaha, Kansas City, East St. Louis, South St. Joseph, South St. Paul, Sioux City, East Buffalo, El Paso, Fort Worth, DENVER, COLO.

Cox-Jones-Van Alstine Company
S. R. COX, Manager
Denver and South Omaha — Phone Main 4217

The Denver Live Stock Commission Co.
BEN KEMPER, Manager
Suite 102 — Phone Main 818

The Western Live Stock Commission Co.
A. F. STRAYER, Manager
Suite 200 — Phone Main 692

Laverty Bros. Live Stock Commission Co.
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J. D. LAVERTY, Manager, Denver
Room 320 — Phone Main 7042

Knollin Sheep Commission Company
R. BRACKENBURY, Manager
Suite 208 — Phone Main 2459

The McKee Live Stock Commission Co.
JAMES McKEE, Manager
Office Phone, Main 1325 — Suite 206

The Houston Commission Co.
SAM F. HOUSTON, Manager
Residence Phone, Main 5454 — Room 306 Exchange Building

W. A. Snyder Commission Company
W. A. SNYDER, Manager
Suite 305 Exchange Building — Phone Champa 854

Drinkard-Emmert Commission Co.
J. J. DRINKARD, Manager
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Wulff Live Stock Commission Co.
WM. J. WULFF, Manager
Room 319 — Office Phone, Champa 4353

The Prey Brothers Live Stock Commission Co.
Denver — South St. Joseph
A. G. PREY, Manager
Suite 202 — Phones, Main 8224-8225

Sigel-Campion Live Stock Commission Co.
A. J. CAMPION, Manager
Suite 201 — Phone Main 728

Great Western Commission Company
MARK BEETHAM, Manager
Denver and South Omaha — Phone Main 5888

Order Buyers

Clayton & Murnan
Suite 103 Exchange Building

Degen Brothers
Suite 210 Exchange Building

J. O. Hall & Son
Suite 407 Exchange Building

Paul Henderson
Suite 312 Exchange Building

Any of the above firms will cheerfully supply market information upon request

Western Farm Life

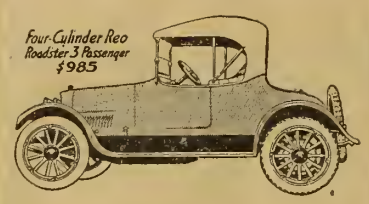
High Altitude Herefords at Glendale Ranch

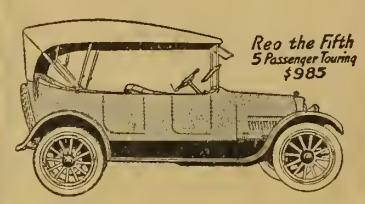
This shows part of the pasture at Glendale Ranch, Aspen, Colo., under the management of J. D. Brunton, one of the most enterprising and successful of the younger Hereford breeders of the West. It was on this ranch that Echo Mischief, a yearling polled Hereford, was bred. This remarkable yearling broke the world's record for polled Hereford prices at the Des Moines, Iowa, sale last winter, bringing $5,000. The purchaser was John Kelleher of Patterson, Iowa. Pure bred cattle and horses from this ranch will again be seen this fall at the western state fairs and at the National Western Stock Show.

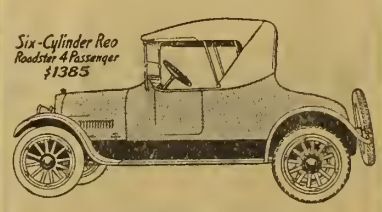
Denver, Colorado
Sept. 1, 1917

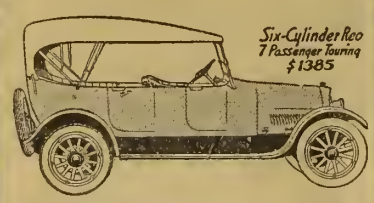
REO

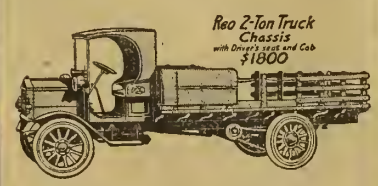
The GOLD STANDARD OF VALUES

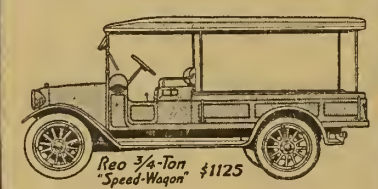












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Reo Quality is Uniform in all Reo Models

AND REO QUALITY at Reo Prices and backed by the Reo guarantee, constitutes "The Gold Standard of Values"—each model in its class.

WE SHOW HERE SIX Reo Models, comprising Fours in Touring and Roadster types; Sixes in Touring and Roadster; and the two Reo Commercial Vehicles—the 3/4-Ton "Speed Wagon" and 2-Ton "Heavy Duty" Truck.

IN THIS ADVERTISEMENT we have space only for a brief paragraph pertaining to each Model—lest you forget the line is so complete that you can find the car you desire, in the type you prefer, and in a Reo.

REO THE FIFTH, "The Incomparable Four," is America's most famous automobile. Standard in practically its present form for now eight seasons—"going on nine." At its present price, $985, this car is verily "A gold dollar for ninety cents."

TO REO THE FIFTH more than to any other, is due the movement that is now so apparent—the return to the Four-cylinder type in all cars listing at less than $1000.

THE FOUR IS THE ULTIMATE type in that price class. Economy of upkeep, as demonstrated by this Reo model, has done much to prove the superiority and ruggedness and economy of the Four in that class of car where the buyer must count the cost and yet demands the service and the roominess.

THE FOUR ROADSTER is the handsomest model of its type you'll see on the road—at any price. And, for the present, you can get it for $985 and freight from the factory.

OF THE SIX ROADSTER the same is true, plus the extra luxury it affords the owner at the extra cost—$1385 f. o. b. Lansing.

THESE TWO ROADSTERS are of similar design and identical construction, and are conceded to be the handsomest cars of the type—price aside.

FOR THE FAMILY that needs a car of greater capacity than five and yet of moderate upkeep, the Reo Six Touring Car—also $1385 for the present—knows no equal.

NO MATTER WHAT YOU PAY you cannot obtain a 7-passenger car of better design; one that represents sounder engineering; more experience; better materials and workmanship than enter into the making of this Reo Six.

THAT'S A BROAD CLAIM, but we make it unhesitatingly—and you know that the word of Reo passes at par everywhere.

OF THE REO MOTOR TRUCKS the same is true. The 3/4-Ton "Hurry Up" Wagon at $1,125 (chassis $1050); and the famous 2-Ton Reo "Heavy Duty" Truck at $1800—each is the leader in its own class—demand greatly in excess of factory capacity.

BUT THAT IS TRUE of all Reo models, without exception.

THAT'S WHY WE SAY "Reo Quality is Uniform in all Reo Models," the uniform over demand for all Reo models justifies the statement.

ORDER NOW if you'd have your Reo soon. Present prices obtain only from day to day, and are subject to increase without notice.

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Lansing, Michigan

Published Semi-Monthly by The Farm Life Publishing Co., Denver, Colo. 14th and Arapahoe Sts.

Entered at the Denver Postoffice as Second Class Matter

WESTERN FARM LIFE

A Western Magazine for Western Farmers and Stockmen

Comprising Ranch and Range, Farmers Life and Fruit Journal, Trans-Mo. Farmer and Ranchman

Largest Circulation of Any Farm Magazine in the West

Volume XIX | DENVER, COLORADO, SEPTEMBER 1, 1917 | Number 17

Federal Farm Loan Money for Colorado Farmers

VISIT TO FARMS THAT GOT FIRST RURAL CREDITS FUNDS

ALVIN T. STEINEL

COLORADO farmers are getting money from the Federal Farm Land banks. The first to receive his cash was Albert Lawrence, president of the Greeley National Farm Loan Association, who was provided with $5,300, secured by a first mortgage on 70 acres of irrigated land in the Delta district, where the Cache la Poudre and the Platte rivers meet. Farmer Lawrence's particular advantage in the transaction is the cutting down of interest on a loan he had from private parties, on which he paid 7 per cent, besides a commission when the loan was negotiated. I asked him what features of the Federal farm loan system appealed to him and he replied:

"First, the low rate of interest; next, the long time and the amortization plan of payment. I feel that I don't have to worry about this debt. It will take care of itself out of the crop revenue."

Along with many others I was of the opinion that the farm loan system would not appeal particularly to the farmers on irrigated lands. My thot was that they are generally well provided with funds thru their local banks, paying only ordinary rates of interest—usually 6 or 7 per cent. The success of the Greeley National Farm Loan association, however, indicates that the irrigation farmer as well as the dry land farmer, appreciates the advantages of rural credits backed by the federal government. At the time of my visit to the district a month ago, applications for over $35,000 had been allowed and there were pending loans aggregating $125,000, the majority from farmers on irrigated land.

This association includes all of Weld county, except the northeastern section, where there are two other associations in operation. Mr. D. C. Royer is secretary-treasurer. Because of his connection with the Weld County Farmers' Protective association, a farmer's mutual fire insurance company, Mr. Royer is able to serve efficiently. His duties for the insurance company take him to all parts of Weld and neighboring counties and he is able to perform the work of secretary-treasurer for the loan association along with his insurance work. Albert Lawrence is president and the other farmers on the directory are N. C. Dougherty, Greeley; W. D. Kay, Eaton; J. F. English, Greeley; W. T. Sylvester, La Salle.

I found Albert Lawrence in a field of tepary beans, where he somewhat reluctantly posed for his photograph. Onions, potatoes, beans, cabbage and sugar beets are his money crops. He makes a specialty of onions, growing sets as well as market onions. He has an onion cellar 98x36 feet, faced with stone, with a ten-foot driveway clear thru, so that the onions can be loaded or unloaded handily. It holds about 5,000 sacks, but can be stacked up to 7,500 sacks if necessary. Ten acres of onions with a perfect stand will furnish an ample reserve supply to fill the cellar this fall. The cellar is equipped for potatoes and can be used for that crop any season that Mr. Lawrence finds it necessary to change from onions to spuds. He has two and a half acres of potatoes this season, with prospects for a big yield.

Home of W. D. Kay, Near Eaton, Colo. Loan of $9,000 Granted on This Farm

Growing Tepary Beans

Tepary beans are a rather uncommon crop, even in Weld county, where practically every variety of beans known to the commercial and seed markets of the country is grown. Mr. Lawrence had an experimental patch of them in 1916. He got 130 pounds of seed from a planting of two pounds. He put these out on a 4-acre field this year, and while the ground was well prepared, the beans were given no irrigation. The stand was perfect when I saw them and they were giving promise of a big yield. Tepary beans are not a general commercial product at present, but are much in demand by seed houses. The variety is considered the quickest maturing of any grown in the West, its growing period being not much over 60 days, and it is especially well adapted to dry land. It is, however, not to be compared with the pinto bean for commercial purposes, as there is no established consumer's market for the tepary, which is a small white bean.

Meeting interest and the 1 per cent payment on principal on the $5,300 loan will be an easy proposition for Farmer Lawrence, whose water supply is from the never-failing Delta ditch.

From the Lawrence farm I accompanied Secretary Royer to the farm of W. D. Kay, whose application for a loan of $9,000 had just been approved. This place comprises about 150 acres of high class irrigated land, about a mile from the town of Eaton, in one of the best agricultural sections of Colorado. Mr. Kay saves $180 a year in interest charges alone by taking up a loan he had secured thru private sources and substituting the government loan at 5 per cent, running 36 years. And he pays off the principal in 1 per cent installments each year. When the time is up the debt is wiped out. Or, if he prefers, he can take up the entire loan, or any part of it, in addition to the annual 1 per cent, at any time after the first five years.

I wondered how the bankers of the rich irrigated sections were feeling about the farm loan money; do they like it? The answer I got from a farmer was this:

The Banker's View of It

"Some are looking at it in the proper way, but others are doubtful of the results. You know our banks have plenty of cash to lend and they are anxious to put it out on farms in this section, because the returns are certain. They can perhaps afford to reduce the interest to meet government competition, but they can't make the favorable terms of payment. In this district the farm loans, so far, have been principally for taking up 7 per cent mortgages. Now I believe that the farmers who are thus making themselves secure on their land mortgage and putting it where the ordinary run of farm income will take care of it year after year, will become better customers of the banks for short time loans for feeding livestock. I think the banks will benefit greatly in the end, because they will have to

Continued on Page 13

Onion Cellar of Albert Lawrence, First Colorado Farmer to Get Money From Federal Farm Land Bank. At Right is Mr. Lawrence in His Field of Tepary Beans

Interesting Story of the Beginning of Kenthurst Farm

A MOUNTAIN HOMESTEAD THAT IS BEING BUILT TO A PLAN

A SLENDER, well-knit, bronzed man, laden with baskets and pails, made his appearance one day in a summer village among the spruces on the banks of a Colorado mountain stream. In the baskets and pails he carried garden truck and eggs which he sold to the cottagers. There was something attractive about his products. The eggs seemed whiter, cleaner and fresher than the summer sojourners were accustomed to, and the vegetables were crisper and greener. So they took all the man had and called for more. That was three years ago.

The next summer when the cottagers returned the tall man was there again, but he trundled his produce down the mountain road in a wheelbarrow and had added chickens to his store of things to sell. One day he went back home with $8.75 as the returns from a wheelbarrow load. So the second summer passed.

This year the village saw the man driving "over the hill" in a buggy,, the four-wheeled vehicle marking a stepping-stone of progress that, undoubtedly, will continue until the automobile stage is reached.

These details are milestones in the development of a mountain homestead. The man is Gordon Kent; the village, Pinecliffe, Colo.; the name of the homestead, Kenthurst; its location, a charmingly beautiful glen, shadowed by towering mountains green with pines and spruces. Nature has given Kenthurst farm a magnificent setting. Tall cliffs mark the gateway to the gap thru which a stream rolls over the stones toward South Boulder creek. Inside the natural gate there is a spreading meadow of waist-deep grasses, bordered by tillable acres of rich silt, stored thru centuries of beaver activity. Beyond is the higher ground, where the farm buildings are located, and bordering this the steep sides of mountains that, to the inexperienced, would seem to offer little encouragement to anyone but a goatherd.

Go with Gordon Kent to the top of the nearest ridge and he will show you a farm in the making. See that grove of quaking aspen? It is a dense thicket of vivid green contrasting with the darker shades of the conifers. A strong ax and a stump-puller will convert that grove into fertile fields for potatoes and other crops. On the way up thru the pines open strips were shown along the steep hillsides. About every twenty-five feet lay a barrier of brush and trees. That is Kent's way of making mountain pasture. The dense timber shuts out the sunlight, but a few weeks' labor at thinning gives the sun a chance and the grass comes. The brush rows are left at intervals to prevent soil washing and catch and hold winter snows, so that the moisture will soak in and not disappear in the runoff. The sunlit open spaces are to be planted to proven pasture grasses, and when the small dairy herd arrives there will be something to sustain it.

Kenthurst Cabin, the Home of Gordon Kent

Mr. Kent began without capital. "Feed yourself first" is the fundamental principle of his agricultural program. The writer dropped in on the homesteader recently and received a demonstration of the success of this principle. Dinner was composed almost exclusively of things produced on the farm, from home-cured roast ham, of delicious flavor, perfectly prepared, to the dessert of rhubarb pie. The potatoes were last season's, but in perfect condition, because things do not deteriorate rapidly at an altitude of over 8,000 feet; onions, lettuce and radishes out of the garden; pickled carrots, which tasted for all the world like spiced peaches, were a new product devised by the ingenuity of Mrs. Kent, as was the rhubarb jelly that tasted like crabapple. Only coffee, sugar and flour of all the viands had to be brought in from "the outside," the rest was homegrown.

These mountain folk have never lost the knack of providing for themselves, because when winter snows in the railroad, which occasionally happens, the village stores run low on provisions and any farmer who hasn't provided for the emergency goes hungry. Experience and necessity being efficient teachers, one seldom finds a mountain ranch that hasn't a well-stocked supply room. At Kenthurst, however, the plan is to feed the family the year round, as nearly as possible from products grown on the homestead. This fundamental proposition being established, the next step is looking toward a farm income. This means, according to Mr. Kent, the keeping of as many cows as the plow land will provide feed for; the keeping of as many pigs as can be fattened on the skim milk and surplus feeds; the keeping of poultry for home use and supplying the tables of mining camps or summer resorts; butter and milk for sale to the same market.

The Potato Field on Kenthurst Farm

Prices are always good, eggs bringing about 5 cents over the best Denver price, and young frys are at a premium in summer when Pinecliffe is full of tourists and summer residents.

Plow land is restricted to the creek bottom, where the soil is rich and deep. For countless centuries the beaver have been building dams, backing up the water and spreading out the silt that washes from mountain sides, providing a soil rich in the mineral elements of fertility, filled with the humus of decayed logs and brush, and of

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Some Timely Hints on Fall Plowing and Listing

STORE MOISTURE FROM SNOWFALL BY THE WINTER FALLOW

E. R. PARSONS

THE creating of a winter fallow to absorb the snowfall has always been a favorite device among dry farmers. It has also been found that where the furrows are laid at right angles to the wind and not harrowed down that they will prevent blowing of the soil; but where high winter winds are prevalent and the soil light, listing is even better than plowing.

The lister is used in the fall as if a field of corn was being planted, which leaves every alternate furrow unplowed, and the dirt being heaped up on these, leaves a series of high ridges which form a perfect snow trap and effectually break the cutting edge of the wind.

In the spring in order to secure a satisfactory seed bed the unplowed center furrow or ridge should be cut out and after being harrowed down the field is ready to plant. In western Kansas and Nebraska on the hard lands which do not blow 50 and 60 bushels of corn to the acre are being raised by plowing as deeply as possible in the fall and then listing in the corn in the spring across the plowing. Corn can be raised in wet seasons without any plowing at all, by simply listing in and then cultivating between the rows when it is up. Once in a while a 40-bushel crop has been raised in this manner, but an average taken in districts where this method is practiced shows that the usual crop is from 10 to 20 bushels in good seasons and from 5 to 10 in dry years.

When the soil is dry, as it usually is in the fall, it is always a question with the farmer as to whether he should plow it or not. Some soils mellow down much more easily and sooner than others, and where this is the case it is usually safe to trust to the winter snows to do the work. It is most important in the spring to choose a time for reducing the winter fallow to a level seed bed when the ground is not too dry or too wet, when the clods are just right to fall to pieces.

To secure full crops of potatoes, oats, flax, spring wheat, etc., they should always be planted on the winter fallow. Spring plowed ground is not compact enough for oats and flax which demand a rather solid seed bed, and since it is impossible to secure a reasonable crop without the deep plowing which conserves the moisture, good work in the fall, allowing the soil to settle all winter, is the best way out.

Potato raisers are finding that for this crop it is impossible to plow or cultivate the ground too often. The ground is plowed as deeply as possible in the fall, and then again before planting, but it is usually conceded that if one plowing is deep the second may be shallower.

When the land is moist enough to plow well in the fall it is always good policy to do as much of this work as possible, for even such crops as corn, milo and Sudan grass, which do fairly well on early spring plowing, will stand drouth better and yield more when planted on the replowed winter fallow.

It is not good policy on the dry farm to plow late in the fall and plant winter wheat. In such land there is seldom enough moisture to insure germination, and the stand is often very poor in consequence.

Is it safe to plant winter wheat on corn stubble? To do so is to take a chance. If the field has been plowed deeply at the start and well cultivated thru a season not over dry, it is possible to harvest from 15 to 25 bushels; but the 30 to 40 bushel crops have all been made off the summer fallow, land which was plowed in the late spring or early summer. Winter wheat should be planted about three inches deep, so that it will not sprout after a shower which is too light to keep it going until it gets established.

Fall rye for hay is about the only crop that may be run in on any kind of stubble without plowing, but for grain it should receive the same treatment as winter wheat and is a surer crop.

There is not much sod as a rule broken in the fall, for the weather is usually too dry; but occasionally this may be done after big snows in October, and if allowed to lie all winter and well disked and harrowed until reduced to a fairly fine tilth in spring, will raise anything. A dry farmer in Montana made 75 bushels of oats per acre on such a field last year.

In dry farming it pays much better to reduce plowed sod to a profitable seed bed instead of following the antiquated notion of waiting for it to rot. In the old days the want of the necessary implements was the farmer's excuse, for today we have both plows and disks which, with very little extra expense will tear the sod to shreds, or bury it and leave a comparatively smooth surface ready for immediate planting.

Mountain States Crop Prospects are Excellent

CROP prospects in Western Farm Life territory are excellent. This is said advisedly and in spite of reports of short summer rainfall in portions of Colorado and New Mexico. In the irrigated sections the outlook, with September approaching, has never been better. In the non-irrigated sections the experience of the summer was not unusual or abnormal. The year will end with about the average, or better, in precipitation, altho not well distributed. Some spots have been overlooked by showers, or at least the rains were deferred until August, and it is now a race to beat the first killing frost. Other spots have had timely summer showers, following a late and wet spring.

In Colorado the pinto bean crop will be heavy, but not so large as has been indicated by some of the newspaper reports, because many fields were planted late and made no growth because of the dry period of midsummer. These cannot mature before frost. Beans put in before the middle of June will, generally speaking, make good yields, altho the state average on dry lands will be nowhere near 800 pounds per acre, as reported, but probably about 400 to 500 pounds.

On irrigated lands beans will come fully up to expectations, with yields all the way from 1,200 to 1,800 pounds per acre. There are no definite figures available on the state's acreage, but careful estimates put it at 180,000 acres.

Winter wheat in the non-irrigated sections fell below expectations, mostly for lack of a late shower to fill out the heads. Sections that lacked this rain are showing up in threshing reports at 8 to 12 bushels per acre, but other sections that had rains in June report 15 to 30 bushel yields.

Spring grains promise the normal yield on irrigated lands and uncertain results on non-irrigated lands.

The hay crop, native and cultivated, is exceptionally large and prices are ruling the highest since pioneer days.

There is an unusually large acreage of corn, with the forage and silage crop assured, but the yield of grain in doubt in all but the lower altitudes of the plains.

In southeast Colorado and portions of New Mexico the August rains came in time to insure heavy yields of cane and grain sorghums, such as kafir, milo and feterita.

Colorado's fruit yield will be the best in some years, with prospects of a greater total revenue than has ever been received by the growers.

Sugar beet prospects are fully up to normal, with a very good stand and a heavy tonnage in sight, the harvest now depending upon weather conditions during the next twenty days.

The following detailed reports from crop correspondents in three states, including county agriculturists and bankers who make it a business to keep in touch with their territory, show uniformly better prospects for all crops at the same period than last season, with indications for as good, if not better, money returns.

COLORADO COUNTY AGENTS

Washington county: Alfalfa, first cutting, one ton per acre; no second crop. Beans needing rain but not seriously injued; too early to estimate yields. Corn about normal. Spring wheat average, about seven bushels per acre; oats, 15 bushels; barley, 20 bushels. Winter wheat yield averages about ten bushels per acre. Potatoes fair, but need rain. Pasture conditions very good. Rainfall below normal every month except May.—Oliver J. Grace.

Fremont county: Alfalfa, big first cutting; second cutting on now; excellent crop. Beans need rain. Corn, good condition. Spring wheat fair but hurt by dry weather. Oats and barley good. Winter wheat average, about 20 bushels Potatoes excellent. Fruit made 75 per cent of a normal crop. Pasture conditions good. Summer rainfall has been about normal and the big rain of August 12th will almost assure all late crops.—R. R. Jeffries.

Kit Carson county: Beans suffered considerable from drouth, but have been benefited by recent rains. Same can be said of corn, and there will be a crop where the corn has been kept free from weeds. Fair crop of spring wheat averaging about 8 bushels; barley, 12 bushels per acre; winter wheat, about 6 bushels. Pasture conditions good. Summer rainfall below normal. —P. N. Flint.

Pueblo county: Alfalfa, first and second cutting has been put up. Yield and quality especially good. Irrigated beans never better. Non-irrigated beans hard hit by dry weather, but heavy rain August 12th will probably make half a crop. Corn very good under irrigation; dry land corn coming fine, but cut short by drouth. Sugar beets, prospects for a bumper crop. Spring wheat good under irrigation; probably average 35 bushels per acre. Oats, irrigated, good, probably average 75 bushels. Estimated average yield per acre on winter wheat, 35 bushels. Non-irrigated winter wheat, 15 bushels, but possibly not over 12 bushels. Potatoes good but not many grown. Pasture dry until the big rain; should be good now. Summer rainfall: The normal for May, June and July is 5.12 inches; this year, 4.91.—Stanley V. Smith.

Adams county: Alfalfa will average 3½ to 4 tons per acre. Non-irrigated beans show condition of 80 per cent; corn, 90 per cent. Sugar beets, 110 per cent. Spring wheat, 105 per cent of normal; oats, 95 per cent; barley, 90 per cent. Estimated yield of winter wheat, 40 bushels on irrigated land; on non-irrigated, 12 bushels. Pasture conditions fair. Summer rainfall has been below normal.—George R. Smith.

Logan county: Alfalfa yield good; some damage by grasshoppers. Irrigated beans excellent but late. Non-irrigated beans fair (some just coming up, August 13). Corn late and short. Sugar beets good. Spring wheat estimated 12 bushels; oats, irrigated, excellent; dry land oats, fair; barley, fair. Estimated winter wheat yield, irrigated, 35 bushels per acre; non-irrigated, 15 bushels. Potatoes fair. Pasture conditions good. Summer rainfall below normal but raining today.—George C. Burckhalter.

Douglas county: Alfalfa, first cutting, good; second, thin; total, 3½ tons per acre. Beans, non-irrigated, fair with prospects of 300 to 600 pounds per acre. Corn prospects good; silage, 8 tons per acre. Spring wheat generally poor; oats fair, about 20 bushels per acre. Irrigated winter wheat, about 48 bushels per acre; non-irrigated, 17 to 20 bushels; quality good. Potatoes promise best crop in years. Fusarium disease showing. Pasture conditions excellent. Summer rainfall has been above normal.—Victor R. Tucker.

Garfield county: Alfalfa, 105 per cent; first cutting average 1½ tons per acre. Irrigated beans, 100 per cent; non-irrigated, 95 per cent. Corn, spring wheat, oats and barley all show up for full crop with sugar beets about 90 per cent. Irrigated winter wheat average, about 34 bushels; non-irrigated, 20 bushels. Full crop of potatoes expected. Fruit condition, 105 per cent. Pasture fine. Summer rainfall about normal, but not well distributed.—R. C. Allred.

El Paso county: Alfalfa fair. Beans, both irrigated and non-irrigated, in good condition. Corn a little backward. Spring wheat, good condition with oats and barley showing up medium. Irrigated winter wheat, 30 to 40 bushels, and non-irrigated estimated 15 to 20 bushels. Potato prospects good.—W. H. Lauck.

Huerfano county: Alfalfa very good, first cutting averaging 1¼ tons. Non-irrigated beans very good in most places, fair in others. Corn poor to fair. Spring wheat good but thin stand. Oats fair to quite poor. Barley fair. Non-irrigated winter wheat averaging about 15 bushels Potatoes good. Pasture conditions good. Summer rainfall considerably below normal.—Waldo Kidder.

Las Animas county: Alfalfa condition, 99 per cent; native hay, 90 per cent; cane and other sorghums, 75 per cent; beans, 60 per cent; broomcorn, 100 per cent; winter wheat, 82 per cent; barley, 96 per cent; potatoes, 69 per cent. Continued drouth broken only by recent rains has cut yields badly both on plains and in mountains. Hail storms have taken their toll. Rainfall about 75 per cent of normal up to August 15. If more rains come at once expected production will rise again. Pasture conditions variable, fair to good.—Chas. E. Smith.

Boulder county: Alfalfa second cutting good, but considerable got wet. Irrigated beans condition fair, considering poor stand. Non-irrigated beans good with poor stand in some fields. Corn has come out fine in last two weeks with good prospects for maturing. Sugar beets in good condition. Spring wheat promises high yields. Barley and oats only fair, as these grains were put in late. Estimated yield non-irrigated winter wheat average 38 bushels. Non-irrigated 27 bushels. Potatoes, conditions good, no blight yet. Fruit only fair with apples probably 50 per cent crop. Pasture getting dry where not irrigated. Summer rainfall below normal.—H. H. Simpson.

San Juan Basin: Alfalfa fine, some farmers having as much hay in stack now as at close of last season. Prospects on beans, both irrigated and non-irrigated, about 75 per cent crop. Corn fine with 50 per cent greater acreage. Spring wheat will average about 30 bushels with good promise for oats and average crop of barley. Irrigated winter wheat about 28 bushels. Non-irrigated 15 bushels. Potatoes good stand but not setting as they should. Fruit about 50 per cent of a crop. Pasture excellent. Summer rainfall a little below normal.—E. D. Smith.

CENTRAL COLORADO IRRIGATED

Loveland, Larimer county: Alfalfa first class; irrigated beans, first class; non-irrigated beans, fair; sugar beets, first class; spring grains, fair. Estimated average yield winter wheat, irrigated, 45 bushels; non-irrigated, 20 bushels. Potatoes, first class. Fruit, half a crop. Pasture conditions fair. Summer has been rather dry.—Loveland National Bank.

Greeley, Weld county: Alfalfa, good; irrigated beans good; non-irrigated beans fair; corn fair; sugar beets good; spring grains good. Non-irrigated winter wheat growing 20 to 25 bushels. Too early to make forecast on potatoes. Pasture conditions fair. Rainfall below normal.—First National Bank.

Sterling, Logan county: Alfalfa good; second cutting in stack. Irrigated beans making good growth but might be caught by early frost. Late beans, non-irrigated, will not mature under normal conditions. Corn, good stand but late. Sugar beets, good average crop, large acreage. Spring wheat on irrigated lands, about 35 bushels average and on non-irrigated lands, 8 to 10 bushels. Early oats fair; late oats very poor. Winter wheat, irrigated, about 40 bushels average; non-irrigated, average about 12 bushels. Potatoes, irrigated, good; only the early planting good on non-irrigated land. No rain from June 1st to August 5th.—Logan County National Bank.

Littleton, Arapahoe county: Alfalfa good, first and second cutting in stack without rain damage and third coming good. Irrigated beans good; non-irrigated, fair to poor; barley good. Corn late. Sugar beets fair. Spring wheat fair to good. Oats fair to poor. Winter wheat, irrigated, estimated 35 bushels average; non-irrigated, 12 bushels. Good crop cherries. Apples promise well. Pasture short. Rainfall under normal.—Littleton State Bank.

Loveland, Larimer county: Alfalfa first class; will make about 4 tons per acre. Irrigated beans excellent, with estimated yield about 1,500 pounds per acre. Non-irrigated beans only fair. Sugar beets, 12 to 20 tons per acre. Spring wheat, 30 to 60 bushels per acre. Oats and barley promise good yield. Irrigated winter wheat, 50 to 60 bushels and non-irrigated, 15 to 30 bushels. Only fair crop of fruit.—Larimer County Bank & Trust Co.

Fort Morgan, Morgan county: Alfalfa, irrigated beans, sugar beets, spring wheat, oats and barley all rated very good. Corn promises good yield. Irrigated winter wheat will run 30 to 40 bushels and non-irrigated, 20 to 30 bushels. Potato prospects good. Pasture conditions fine at present. Summer rainfall has been about normal. —First National Bank.

Castle Rock, Douglas county: Alfalfa, first cutting good, second light. Non-irrigated beans generally looking good. Corn conditions fair. Spring wheat average below normal. Oats showing effect of drouth. Non-irrigated winter wheat, 10 to 15 bushels. Potato outlook good. Pasture conditions good. Summer rainfall below normal. —First National Bank.

Fort Lupton, Weld county: Alfalfa made good yields. Irrigated beans in good condition. Non-irrigated beans damaged by drouth. Good prospects for early planted sugar beets. Small grains fair to good. Estimated yield winter wheat, 30 to 50 bushels. Potato prospects good. Pasture conditions fair to good.—Fort Lupton State Bank.

Julesburg, Sedgwick county: Alfalfa, first crop, very good; second coming nicely. Irrigated beans looking well but slow in setting. Non-irrigated beans generally look well. Corn backward but looks good. Sugar beets, expect best crop ever. Some damage to spring wheat by drouth. Estimated yield irrigated winter wheat, 20 to 50 bushels; non-irrigated, 10 to 40 bushels. Potatoes looking very fine. Pasture conditions fairly good. Dry spell July to August 5th. Fine rains recently.—Citizens National Bank.

DRY FARMING—EASTERN

Flagler, Kit Carson county: Good average condition reported for alfalfa. Same for corn and beans. Spring wheat prospects, 5 to 15 bushels per acre. June and July rains were local, so grain suffered in some places. Potatoes look good. Pasture is the best in 20 years at this season. Summer rains about normal up to June 10th; below normal after that up to August 1st. Plenty of rain since that date.—Farmers State Bank.

Wray, Yuma county: Alfalfa about an 80 per cent crop. Beans very fair, about a 75 per cent crop and five times the normal acreage. Corn very fair to date (August 12) and with further rains will have the biggest corn crop ever raised in this county. Prospects are for an average of 10 bushels on spring wheat. Winter wheat good, going 25 to 45 bushels. Barley good to extra good. Small acreage of potatoes, but look good. Pasture fair to extra good. Summer rainfall just about normal, possibly a little under.—First National Bank.

Kiowa, Elbert county: Alfalfa, good average yield; good prospects for beans, large acreage. Corn acreage about as usual, but late. Spring wheat poor; oats poor. Winter wheat yield estimated at an average of about 12 bushels. Potatoes, 100 per cent crop and quality good. Pasture conditions fair.—Kiowa State Bank.

Roggen, Weld county: Two good cuttings of alfalfa. Small acreage of irrigated beans, good condition. Non-irrigated beans, large acreage and look as tho they would average 500 pounds to the acre. Spring wheat, fair, 25 to 35 bushels. Oats and barley poor. Winter wheat yield estimated at about 35 bushels average on irrigated land and 20 bushels on non-irrigated. Potatoes look like failure. Pasture conditions bad; sand grass fair. Summer rainfall under normal. —Roggen State Bank.

Holyoke, Phillips county: Alfalfa good; beans fair; corn good; spring wheat fair; oats good; barley fair. Winter wheat will average about 20 bushels. Potatoes fair. Pasture conditions first class. Summer rainfall was about normal.—First National Bank.

Akron, Washington county: Beans will make about 20 bushels per acre. Spring wheat about 12 bushels; oats, 25 bushels; barley, 40 bushels. Winter wheat averaging around 15 bushels. Potatoes will make 100 bushels per acre. Pasture conditions are good. Summer rainfall was below normal.—First National Bank.

Hugo, Lincoln county: Conditions fair. Getting some good rains. It is yet too early to predict yields.—Hugo National Bank.

Cheyenne Wells, Cheyenne county: Fair crop of corn in prospect. Ensilage crops will make a fair average. Pasture conditions are splendid. Rainfall has been a trifle below normal.—Cheyenne County State Bank.

Stratton, Kit Carson county: Beans in fair condition. Corn good in some localities, poor in others. Winter wheat yield will run from 5 to 20 bushels. Potato prospects poor. Pasture conditions fair. Rainfall below normal.—Stratton State Bank.

Vona, Kit Carson county: Beans in good condition. Corn and spring wheat fairly good. Winter wheat, about 15 bushels per acre. Potatoes a little late, but prospects good. Pasture conditions good.—Vona State Bank.

Strasburg, Arapahoe county: First cutting of alfalfa average; no second cutting on uplands because no rain. Beans quite late but looking well. Corn hurt somewhat by dry weather, but some fields setting ears. Spring grains practically a failure, account of drouth. Winter wheat yields, 5 to 20 bushels per acre. No rain except few local showers since June 5th.—Strasburg State Bank.

Sedgwick, Sedgwick county: Alfalfa, two good cuttings in stack, third growing fine. Beans looking good. Corn looks good, yields depending on how long frost holds off. Irrigated spring wheat above average, non-irrigated fair. Same on oats and barley. No winter wheat threshed yet. Potatoes look better than ordinarily. Pasture improved by recent rains. Spring rains above average, early summer short; now getting plenty.—First National Bank.

Brandon, Kiowa county: Have had recent local showers, but need good general rains. Forage crops not damaged.—First State Bank.

Elizabeth, Elbert county: Alfalfa, first crop ran about three-quarters ton per acre; second coming nicely. Beans, non-irrigated, should run 600 to 800 pounds per acre. Corn is short but should develop good grain. Spring wheat looking good with probable yield 15 bushels on the average. Oats very short, some will be cut for hay. Winter wheat probably average about 12 bushels. Potatoes, tops looking fine but not far enough along to estimate yield. Pastures short. Summer rainfall below normal; only local showers.—Elizabeth State Bank.

New Raymer, Weld county: 5,000 acres non-irrigated beans only in fair condition and frost may get some. Good acreage of corn; yield will depend on how long frost holds off. Spring wheat will make about 12 bushels. Oats fair. Non-irrigated winter wheat averages 12 to 15 bushels with some as high as 35 bushels. Pasture conditions good. Summer rainfall lighter than normal, but enough to make crops.—State Bank.

Arriba, Lincoln county: Beans promise full crop; corn 70 per cent; spring wheat 70 per cent; oats 75 per cent; barley 60 per cent. Winter wheat 10 bushels per acre. Potatoes about 90 per cent. Pasture conditions good. Summer rainfall below normal.—Lincoln State Bank.

ARKANSAS VALLEY

La Junta, Otero county: Alfalfa, big yields, 3 to 5 tons. Irrigated beans fine; non-irrigated very poor. Corn will run about 40 bushels per acre; sugar beets about 15 tons; spring wheat, 30 bushels; oats, 75 bushels. Estimated yield irrigated winter wheat, about 40 bushels; non-irrigated, 15 bushels. Fruit crop good. Pastures dry. Summer rainfall about normal.—First National Bank.

Lamar, Prowers county: Alfalfa, about 80 per cent crop. Non-irrigated beans, about half a crop. Corn, small acreage but good prospects. Average yeild of sugar beets. Good crop oats, small acreage; same on barley. Irrigated winter wheat, about 40 bushels. Pasture conditions poor. Summer rainfall about 25 per cent off.—Citizens State Bank.

Ordway, Crowley county: Alfalfa above the average. Irrigated beans in good condition and recent rains have improved non-irrigated beans. Corn good; sugar beets above the average. All small grains in good shape. Winter wheat, irrigated, will make about 40 bushels. Pasture conditions have been improved by recent rains. Summer rainfall has been about normal.—Citizens Bank.

SAN LUIS VALLEY

Monte Vista, Rio Grande county: Alfalfa and native hay, unusually heavy yields, with prices ranging $18 to $20 f. o. b. cars Monte Vista. Spring wheat prospects unusually good. Oats, barley and field peas looking fine. Barley nearly ready to harvest. Potato acreage about 25 per cent greater than last season. Yields promise equally as good. Have had frequent local showers but no general rain. Abundant water supply for irrigation. Pasture conditions excellent and unusual quantity of stock on forest range which will be brot to the valley in the fall for finishing on peas and alfalfa.—Wallace State Bank.

San Acacio, Costilla county: Alfalfa, 2½ tons per acre. Spring wheat, 18 to 25 bushels; oats, 25 to 40 bushels; barley, 20 to 25 bushels per acre. Winter wheat going about 25 bushels. Potato crop in good condition. Pastures good. On the whole, over Costilla Estates lands promise of best crops we have ever had. Hogs, cattle and sheep below normal in numbers.—Costilla County Bank.

WESTERN SLOPE

Grand Valley, Garfield county: Alfalfa good, 3 tons per acre. Irrigated beans, good crop. Spring wheat good. Potatoes good. Good fruit crop; prospects for hundred cars shipped from this point.—Garfield County State Bank.

Grand Junction: Alfalfa making the best crop ever grown in this section. Corn fair. Sugar beets will go 10 to 18 tons, prospects being for a good crop. Oats fair. Irrigated winter wheat 25 to 40 bushels. Potatoes about 175 cars in Mesa county. Fruit: Estimated 2,825 cars of apples, 1,150 cars of peaches, 650 cars of pears.—U. S. Bank & Trust Co.

Kremmling, Grand county: Alfalfa will make two cuttings. Hay crop 25 per cent above the average yield. Oats fair acreage, crop normal. Potatoes, prospects good; acreage about double. Pasture conditions good. Summer rainfall about normal.—Bank of Kremmling.

Walden, Jackson county: Hay crop 20 per cent heavier than normal. Calf crop 20 per cent below normal, caused by severe winter.—Stockgrowers Bank.

NEW MEXICO

Albuquerque, Bernalillo county: Alfalfa good; will make three cuttings about 3 tons per acre. Irrigated beans very good, with prospects 1,000 to 1,500 pounds per acre. Non-irrigated beans medium, expect about 400 to 500 pounds per acre. Corn fair but late. Spring wheat very good with indications 20 to 30 bushels. Winter wheat, irrigated, about 30 bushels; non-irrigated, 8 to 10 bushels per acre. Pasture conditions about normal. Summer rainfall has been under normal.—H. C. Stewart, County Agriculturist.

Clayton, Union county: Alfalfa, fair yield for first cutting, second cutting lighter. Non-irrigated beans fair with estimated yield about 300 pounds per acre. Corn damaged by drouth and will not go over 10 bushels per acre. Spring wheat will average about 10 bushels. Oats about 20 bushels. All small grains hurt by drouth. Winter wheat, non-irrigated, will average about 10 bushels on an acreage of 10,000 acres. Pasture conditions fair; drouth broken and grass will now start.—Orren Beatty, County Agriculturist.

Las Vegas, San Miguel county: Alfalfa going 3 to 4½ tons per acre. Irrigated beans, about 1,200 pounds per acre and non-irrigated 700 pounds. Corn poor; spring wheat, about 20 bushels. Oats poor, about 25 bushels; irrigated winter wheat, 30 bushels; non-irrigated, 5 bushels. Big crop fruit. Pasture conditions poor.

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Harvesting the Pinto Bean Crop

SEASONABLE SUGGESTIONS FOR BEAN GROWERS

HAND HARVESTING beans is only adapted to small patches. Hand harvesting is usually done by either pulling the vines or cutting them off just under the surface of the ground with a sharp shovel. The vines thus pulled or cut off are shocked by means of pitchforks.

The best machines for harvesting beans are the regular bean harvesters. These machines cut the bean plants off just below the surface of the ground and by means of fingers push two rows together into one harvested row. The most up-to-date machines have bunching devices on the machine which bunch the cut vines into small, neat bunches. These bunches can be dressed up a little by a man with a pitchfork for curing. Many of the machines, however, have no bunching device. In this case, the bunching must be done by hand. Men follow the machine with pitchforks ,putting the cut beans into neat shocks.

While a regular bean harvester is desirable and should always be used if there is any considerable acreage of beans grown, they may be harvested by using a breaking plow of the rod type or by using a common sod plow with the moldboard removed. Such expedients are much better than hand work on patches an acre or more in size, but should only be used on small patches where the size of the patch is not large enough to justify the purchase of a regular harvester.

Harvesting Period.—Opinions differ as to the proper time of harvesting. But experience and experimental work both show that if the beans are allowed to become completely ripe on the vine heavy loss occurs from shattering. A good rule to follow is to harvest when the pods are turning yellow, but have not yet dried out; at this stage there will usually be about half of the pods yellow ripe and a few still showing some green, providing the beans are ripening uniformly. When cut at this yellow-ripe stage, the beans will ripen up in the shock during the curing process and the loss in weight by drying out is very much less than the loss in weight thru shattering if the beans are allowed to become too ripe.

Care of Harvested Beans.—The beans that are cut with the harvester should be made into small shocks. The height of the shock will be just as high as possible and have the shock stay erect. In windy plains sections small round shocks are less likely to be blown away or thrashed out by blowing. In drying weather the shocked beans will cure rapidly. If it is impossible to thrash them when cured, it would be far better to stack them in neat stacks so as to prevent loss by blowing, discoloration from weather conditions, and also to leave the land free for cultivation. If the beans have been properly shocked there will be very little shattering in stacking, as the stacking can be done early in the day, or loss may be prevented by covering the hay rack or bean rack with canvas. In building a stack a bottom should be made with straw and the stack should be topped out with straw and weighted. If straw or millet is not at hand to be used for this purpose, a stack cover of canvas or corrugated iron will be advisable if any considerable time is to elapse before thrashing.

The harvesting process, together with summer cultivation, leaves the land in excellent shape for fall planted crops such as wheat, or even for spring planted crops, as plowing is not necessary after the tillage given the beans.

Thrashing

Beans split very easily unless handled with care. Split beans are docked on the market. Consequently, tools should be used which split the minimum of beans. It is for this reason that the regular bean hullers or bean thrashers should be used for thrashing the crop.

There are a number of manufacturers having bean hullers on the market. It is possible by using some of the modern attachments to thrash beans with the regular grain separator. This should not be done unless a bean huller is so expensive, acreage considered, as to make it inadvisable. Where the grain separator is used to thrash beans special attachments are put in and the cylinder is run at a very slow speed. Usually all the concave teeth with the exception of one row are removed.

Where a grower has only one-half an acre, or one acre, it is sometimes easiest and cheapest to thrash out his beans with a flail. Fifteen to eighteen hundred pounds a day can be thrashed out in this way by a single man.

Very few of the thrashing machines on the market will properly clean beans for the market. Consequently, machines called bean cleaners have been devised to clean up the beans ready for marketing. If any considerable acreage is grown, it would pay to have a bean cleaner to clean the thrashed beans before they are put on the market. Where only small acreages are grown, neighbors might well co-operate in the purchase of a cleaner, as one cleaner would do the work for several small growers.—Prof. Alvin Kezer in Bulletin 226, Colorado State Experiment Station.

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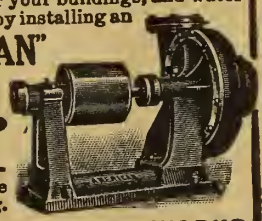

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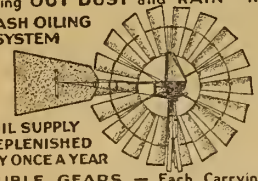

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The draft for war service which has been made upon the Bell System is summarized in a recent Government report.

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Advantages of Sweet Clover

EXPERT POINTS OUT ITS POSSIBILITIES

DR. VERNON T. COOKE

ANNOUNCEMENT

Following is the first of a series of articles by Dr. Vernon T. Cooke, the dry farming expert, on the subject of White Sweet Clover, an important leguminous crop for the non-irrigated sections. Dr. Cooke was one of the leaders in the International Dry Farming Congress before the organization moved over into the humid region. He was employed for some time by the Brazilian government to develop non-irrigated farming, but most of his experience was gained in the semi-arid states of this country, he having successfully farmed under extremely light rainfall of Eastern Washington and having also conducted a dry-farming experimental and demonstration farm for the State of Wyoming at Cheyenne. Our readers are urged to preserve these articles, as the series will contain much valuable information regarding a crop that has been too long neglected. Discussion of the points brot out by Dr. Cooke is invited; also we shall endeavor to answer questions concerning the subject. —Editor.

WASTED moisture—mark the words, usually combined with misdirected efforts of dry farmers, are the principal causes of crop failures in those regions where the rain and snowfall is meager and where moisture often comes when you don't want it and fails to come when your crops need it badly.

Much soil in the arid and semi-arid regions is very compact and, due to this compactness, resists the absorption of water, consequently vegetation is not as abundant as in soils which hold more moisture. Sparse vegetation necessarily means smaller roots and, therefore, less decaying vegetation in the soil to become humus. We who farm in the semi-arid states start with a minimum amount of organic matter in our land, which organic matter, after undergoing chemical changes, is rapidly used up by our growing crops, especially those we cultivate, as corn, potatoes, etc., and last but by no means least, by summer tilled land. Poor plowing, too, is another great source of loss of organic matter, thru too much vegetation being left on top of the soil to get dry and blow away, or gathered in heaps by our harrows.

Soils with a small amount of humus will not hold as much moisture as those that have plenty. Soils with plenty of humus in them hold thirty to forty and even fifty per cent more moisture than those which are deficient, and they are easier plowed (speaking of heavy soils), besides the humus puts the texture of all soils in better condition to be worked.

The fertility in most arid and semi-arid soils is practically unlimited, never having been leached out as in those regions where there is often an excess of rainfall, especially when we make comparisons with what moisture the arid and semi-arid regions receive. These facts should be recognized by the progressive agriculturist and he should strive to make the fertility in his soil available for his growing crops by keeping up the humus content of his land. He should realize that without humus his soils cannot hold maximum amounts of moisture and will only give up a minimum amount of fertility to his growing crops.

His remedy is easy; not only easy, but the remedy pays the farmer whilst it is putting his soil in better condition for future large crops. Nature is and has been lavish in her gifts to the world, but the proper uses of many of them have been and are overlooked in our hurry to get what we are striving for.

WHITE SWEET CLOVER (Melilotus Alba) is a plant that was and is yet considered by some an undesirable and pernicious weed. Prussic acid (hydrocyanic acid) is a deadly poison, yet has its useful place in medicine. When white sweet clover was recommended to the Dry Farming Congress at Spokane, as a means of restoring the depleted organic matter in the soils of Eastern Oregon and Eastern Washington, there was a howl of protest by several prominent agriculturists, because, they said, it was a weed. It takes time to prove that we make mistakes and that our ideas are sometimes wrong.

White sweet clover may be a weed under some circumstances, like other useful plants, but it

WILL put into our farm lands an immense amount of roots the second year of its growth;

WILL penetrate and break up hard sub-soils, opening up our soils, so that moisture can and will percolate down, down;

WILL make our land like a reservoir, capable of holding vast amounts of water, to be held therein by the farmer, if he uses his brains and muscle at the proper time to conserve same;

WILL grow on any land where there is anything else growing, be it alkaline or not;

WILL respond wonderfully to good treatment in good soils;

WILL, if properly used as a pasture, keep more stock per acre than any other pasture does—barring irrigated land when intelligently irrigated.

WILL not bloat cattle or sheep unless same are put on a luxuriant growth of clover when it is damp or wet and stock are very hungry; and if stock don't bloat under such conditions they ought to;

WILL make good hay if cut the right time and properly cured;

WILL, if season favorable, give crop of hay second year and crop of seed;

WILL immensely improve the nitrogen content of the soil, especially in a good season;

WILL put the soil in splendid condition for alfalfa, be it on (so-called) dry farming or irrigated land;

WILL not become a pest as a weed if proper precautions are taken.

In fact, there are few plants that the dry farmer can use so advantageously to his land and pocket as the often much abused white sweet clover.

But lest we forget, we must recognize good and proper preparation of the soil; good seed, that is seed of high germination and vitality, sown at the right time and right quantity per acre, with a press drill.

Those are most important factors in getting the results we are after. Properly used, white sweet clover is the salvation of the dry farmer in years of low moisture and no progressive farmer will overlook its help. It should be used in a rotation. It pays its way from the first crop and, by its roots, for some years after it is dead and buried. Try it, if only on a small scale, but please give it a fair show, by doing the best you know how in plowing and seeding with good seed.

The manure pile is an economic asset, but may become a health liability unless it is spread upon the fields frequently.

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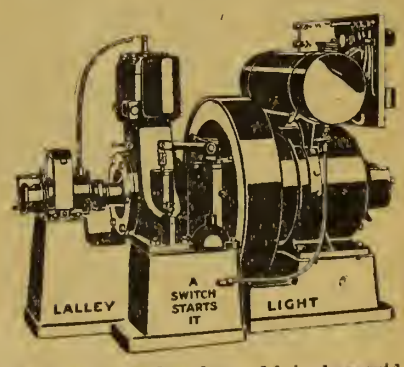

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Financing the Potato Crop

The Federal Reserve System is available to potato growers in the mountain states for financing the marketing of their crop this fall. Farmers who store their 1917 potatoes in approved local warehouses may obtain upon their storage receipts, ninety day loans from member banks of the Federal Reserve System at a rate not to exceed 6 per cent. The matter was brot to the attention of the National Food Administration by Lou D. Sweet, who is president of the National Potato Growers' Association, as well as the Colorado State Association. The first to take advantage of the plan are the New England growers, who are facing the handling of a 45,000,000 bushel crop, which represents one-tenth of the entire production of the United States. At a conference recently held in Boston between the New Eugland growers and Food Administration officials, the following plan of action, which can be followed in somewhat the same form by mountain states growers, was adopted:

1. Marketing of only one-third of the crop at harvest time; another third in ninety days, or placing it in storage, and later distributed as demand affords opportunity; the remaining third to be stored by the grower and marketed thruout the year.

2. All potatoes to be graded with care, taking out culls, cuts, cracks and any that are bruised. It was recommended that a wire screen grader be used—1⅞-inch mesh for oblong tubers and 2-inch mesh for round ones. Graded stock then to be placed in good two-bushel sacks, 115 pounds to the sack, and the sacks sewed tightly so as to prevent shucking and bruising.

3. Increasing the load in each railroad car from the normal 30,000 pounds to 45,000 or 50,000 pounds. That these cars be unloaded within twenty-four to thirty-six hours of their arrival at destination.

4. That municipalities and other bodies provide storage for as large quantities as possible at the peak of the harvest.

"A storage house," said Lou D. Sweet, who attended this meeting, "such as will conform to the requirements laid down by the Federal Reserve Board, does not call for a specially constructed house. There are innumerable buildings which, if properly cleaned, ventilation provided, and managed so as to maintain a temperature of about 35 degrees, will answer admirably for this purpose.

"This year the United States planted its potato crop from the poorest quality of seed that ever went into the ground, and naturally the harvest will be potatoes of poor quality. Strict grading, careful packing, common sense storage, and careful shipping are necessary to insure just returns to the growers who have responded to the President's call for increased production of potatoes."

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Traitors in Congress

We have before us an envelope that came free tbru the mails carrying an eight-page extract from the Congressional Record, emanating from the office of United States Senator James A. Reed of Missouri, and bearing the following inscription upon its face:

"United States Senate. Part of Congressional Record free. Qualifications of Herbert C. Hoover of London, England, for the Position of Food Dictator of the United States."

We are treated here to the undignified spectacle of a United States senator sending broadcast over the country at public expense and as a government document, a wholly unjustified attack upon a man who has been appointed by the president of the United States to take over the important work of readjusting food prices. Senator Reed knew when he ordered his attack to be put free thru the United States mails that Mr. Hoover had been made food administrator, consequently his act could not have been more flagrant an offense than if he had stepped up to President Wilson in the White House office and slapped him in the face.

Men often say things in the heat of debate which they sincerely regret when their ardor has cooled, or when a majority vote has gone against them. In this instance it is apparent that the senator from Missouri is dead to every consideration of fair play and Americanism. His object is clear, namely an effort to weaken the work of food control; to continue the reign of the food pirate by breaking public confidence in the food administrator. This of itself would be bad enough, if it came from tbose avowedly in the game of fattening off the rise in the cost of living, but to have the attack made by a United States senator, using his high office and his franking privilege for the purpose of breaking down an arm of the government service in time of war is certainly near the border line of treason.

Recently the people of Colorado were compelled to hang their heads in shame because of the actions of Congressman Hilliard of Denver, who abused his franking privileges by circulating, just before the day of draft registration, a speech which he never delivered, but which he was given leave to print in the Congressional Record. No one disputed the Congressman's right to take the anti-draft side of the question in debate, but when this stand was repudiated by an overwhelming vote and the bill had become the law of the land of a nation at war, no one but a traitor at heart could have conceived of such an underhanded attack, or would have had the nerve to carry it into effect.

We take drastic action against individuals in private life who are guilty of traitorous conduct, but public officials, so far, have escaped all except censure. Let those of us who stay at home and do the voting while the boys are doing the fighting, see to it that the country's defensive force has at its back in Washington patriots who will not betray their government.

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Farmers' Bulletin No. 576, entitled "Breeds of Sheep for the Farm," will assist the owner of grade ewes in the selection of a purebred ram to head the flock. This bulletin discusses the different breeds, their characteristics and adaptabilities. Advice on the different kinds of equipment to be used on the sheep farm can be obtained from Farmers' Bulletin No. 810, dealing with "Equipment for Farm Sheep Raising." This bulletin can be procured free by writing to the U. S. Department of Agriculture, Washington, D. C.

More Good Editorial Features

WE are all looking for a more settled condition of business during the fall and winter, for two reasons. One is the stabilizing influence that will be exerted by the government's supervision of food supplies and costs; the other the certainty that the money advanced by the people some time ago to float tbe Liberty Loan will go into general circulation for the purchase of supplies for the army and the upkeep of the many military establishments that now dot the country. Troop movements will be in progress all winter; supplies will be got ready for shipment or will be actually shipped, not only to the Atlantic seaboard destined for our army abroad, but to the various cantonments, where the young men are being trained for their part in the conflict. Furthermore, there will be a tremendous movement of foods to the Allied governments.

In all of this the mountain states farmer will share. Not at inordinate profits, but with assurances from the government of at least a reasonable return, commensurate with the higher prices exacted from the farmer for everything he is obliged to buy. The country has settled down to the serious business of the war and every man, be he on the farm or in the city, has his part to do. While this inevitable prosperity does not in any way mitigate the awfulness of the conflict, there is reason for gratitude in the fact that the war does not find this nation impoverished, nor in any danger of impoverishmeut. We have agricultural resources to draw on for double our present population, and no other country engaged in the war is so fortunately situated.

These reflections on the business side of the war bring me to some matters of personal concern—some of our WESTERN FARM LIFE family affairs in which you and I have a mutual interest. The war has forced great burdens upon publishers—the war, plus the desire of some for unjust profits. I have told you before, I believe, of the enormous increase in paper cost, a matter of something near 100 per cent in the last two years, and of the increased cost of engravings; of the high cost of printer's ink, etc. In spite of this no advance has been made in the subscription rates and you are getting the paper today for the same figure as two years ago. On top of this I have added nearly 100 per cent to the editorial expense by engaging new men and women to handle the editorial work and give you a better and stronger magazine, with more practical material that you can apply on your farm to make your business more prosperous. Not a cent of this added expenditure is regretted, for I feel that we owe it to you to give you, without qualification, the very best farm paper that your money can buy. There is no success for me unless I satisfy you, hence the motto: The best is none too good for WESTERN FARM LIFE subscribers.

I am not going to rest on my oars and tell you that I am giving you all that I can afford. That would be the truth, under present abnormal conditions, but I will stop short only of actual losses and continue to strengthen the magazine at every point just as fast as it is humanly possible to do so.

It will interest you to know that Prof. George E. Morton, editor of the Dairy and Hog department, who is rated as one of the highest authorities on animal husbandry in the West, will begin in the issue of October 1st a series of articles on breeding, to be followed by feeding and other phases of livestock farming. These articles will be given in class room style and in Prof. Morton's forceful and plain language. He will start with the breeding question. Each article will be like an institute lecture, and to make the series more interesting, farmers are urged to come back at the Professor with questions. Fire in your inquiries after you read tbe article. This will give him fuel for further discussion of practical subjects. This will be virtually a correspondence course in animal husbandry, which is provided for you free of charge. It is up to you to get the best out of it. You can attend tbe agricultural college free if you will use the facilities provided for you in these columns.

From time to time other announcements will be made. WESTERN FARM LIFE never gets into a rut. It is my object to keep just a little in advance of agricultural development in these five mountain states; to make the magazine better with every issue, because I believe in the future of this region. I am farming here myself, so I know the farmer's viewpoint and his problems, consequently consider myself able to judge of what you want in the way of a live, up-to-the-minute farm journal.

W. S. Edmiston

General Manager.

THE GRANGE

State Master John Morris brings a very optimistic report of his trip with State Master Ketcham of Michigan on the summer Grange picnic round-up. The atteudance and interest at practically every point were beyond expectation. This was particularly the case at some of the outlying points, where the Grangers turned out in greater numbers, in proportion to the rural population, than in the thickly settled irrigated regions.

The Michigan visitor was particularly impressed with the attendance and interest in Washington county, the picnic being held at a point 15 miles north of Akron. There were about 500 farmers present, and some fifty autos and a slightly greater number of horse-drawn vehicles were counted. This was the first of the series, being held July 9th. On the following day there was another big crowd at Keota, where the Buckingham band furnished the music.

Fort Collins, on the 11th, was rather disappointing from an attendance standpoint, probably due to the fact that the farmers were too busy irrigating. On the 12th there was a red letter event—the big picnic in Teller's Grove, Boulder county. Here the farmers had the pleasure not only of listening to the eloquence of the Michigan State Master, but also to the practical talk on the war and food conservation delivered by the Hon. Carl Vrooman, assistant secretary of agriculture.

Kiowa turned out with a courthouse full to hear the Michigan visitor on the 13th, and then followed similarly good meetings at Golden and Glendale Grange.

Subsequently State Master Morris went to southeast Colorado, where he visited four new Granges and attended five meetings, the first one a picnic on Bear creek in Baca county. Following this there were meetings at Konantz, Pretty Prairie, Vilas and Lamport.

Colorado in the Lead

C. M. Freeman, secretary of the National Grange, reports the following Granges organized during the quarter ending July 1, 1917: Colorado leading, with 21; Oklahoma, 18; Ohio, 17; Kansas, 16; Pennsylvania, 15; Washington, 10; Oregon, 5; Illinois and Indiana, each 4; California, Maryland, Missouri, each 3; Idaho, Massachusetts, New York, each 2; Kentucky, Nebraska, North Dakota, Vermont, West Virginia, Wisconsin, each 1, making a total of 131 new organizations. In addition there were four reorganizations. The fact tbat Colorado leads in number of new Granges is gratifying to the local state officers, indicating that they are "on the job"

Comment by Farmer Putnam

SUBMITS SOME PRIVATE CORRESPONDENCE BETWEEN HIMSELF AND JOSEPHINE, HIS WIFE

Denver, August 25, 1917.

ME and Josephine has been a-gittin' along fine all summer, doin' all of our fightin' by correspondence. I reckon that's the best way to fight, because both parties kin come out victorious. Nobody kin prevent you writin' what you durn please and they cain't talk back successful, because you allus know when you git the back talk you kin have another show at answerin'. As long as the stamps hold out and the rural mail keeps goin', me and Josephine kin keep up a runnin' fight without neither of us gittin' wounded and both feelin' satisfied that we're gittin' the best of the quarrel. I wisht them nations that's fightin' in Urup would try our plan. They don't seem to be gittin' nowhere by killin' men and it's time to try some other system. I see the Pope has been suggestin' that they git together and make peace and I second the motion. If I kin do of any help I'm willin' to do my part.

I don't want to git too pussonel, but I reckon you-all will be kind-a interested in readin' some of the letters that's been passin' back and forth from Josephine to me in the last few weeks:

Dear Tom:

I seen by your last postal that you're a-goin' out to Bert Cave's ranch to spend Sunday. Now, Tom, remember your manners. The Caves has lived in the city, and I reckon they'll have napkins and toothpicks and other conveniences which you know how to use, but which you don't pay much attention to when I ain't thar to nudge you with my ellbow. Don't tuck the napkin under your whiskers; put it in your lap and before you fold it up shake out the bones and crumbs which you dropped into it, so's they cain't see how messy you air at the table. I swan, Tom, I don't see why people invite you when I'm not along. I reckon you're allus disgracin' the family. I should-a knowed better than marry into your family; them Putnams didn't have much raisin' nohow. Don't pick your teeth till after the pie is served; it ain't polite to pick 'em till the feed is over and you lean back in your chair and talk about crops and the cattle. If they has peas don't eat 'em with your knife. Use a spoon if you cain't balance 'em on your fork. I do hope you'll be careful, Tom.

Did you pay the taxes when you was down in Collins like I told you to? Did you see Judge Stover about the mortgage? Did he tell you when the intrust was due agin? Did you pay him fur makin' out them papers? Did you see about the insurance pollisy? Has it expired yet?

The spuds is comin' along purty good and I reckon we'll git a crop but the oats is a little short. It's been awful hot and dry up here and the neighbors sez it's because of sun spots caused by the war. The boys killed two coyote pups last week over in the back pasture. You're allus claimin' to be a expert, now Tom see if you cain't give us somethin' that'll wipe the spots offen the sun and keep 'em off, so's it will rain. I think most of your expertin' is just blow and wind and I don't see why people will pay you money fur writin' such fool truck. Give my regards to Mrs. Cave, and Tom do be careful of your manners with them people. They got a Pierce-Arrow and them kind-a people hadn't orter expect much from just plain Forders like us. If Mrs. Cave has got any settin' hens bring one back with you; seems I cain't git any of 'em clucky up here in this altitood.

Yours lovingly,

JOSEPHINE.

I kep' a copy of the answer I sent to her, and here she goes:

Dear Josephine:

Your lovin' and kind letter received, and I hope you are the same. I had a nice time at the Caves. Don't worry, I know my manners. I reckon them big fellers in Denver like Fred Johnson and Governor Ammons wouldn't have me goin' to them Civil Association lunchyons if I didn't know how and when to pick my teeth or wipe the grease offen my whiskers. The Caves sure was nice to me. Della—she's the cook—served chicken that was roasted in butter and she didn't bother with peas, but served string beans. I got a settin' hen which I am sendin' up by parcel post, because I ain't got time to come up now, my duties bein' too pressin'. I hope she arrived safe and sound. Yes, I tended to all them things you said I should, but I never git no thanks but nothin' but "be careful, now," "don't do this," nur "don't do that," nur "don't disgrace me," outen you, my beloved wife. I reckon we all have a cross to bear and you're sure mine. I'll be home some time this fall, but don't know just when. How's the work goin'? Did you have to hire anybody to help cut hay or could the boys do it alone?

TOM.

Dear Tom:

Yes the hen came, but what on airth did you do to the poor critter? She's cluckin' wuss then any settin' hen that I ever seen, but she hates the sight of a nest of eggs and won't stay on 'em. Stay away as long as you kin. Things go fine on the ranch when me and the boys is here alone. The minit you come up you begin to give us expert advice on how to cultivate the spuds, how to spray pizen on the vines to keep off bugs, how to run the water on the alfalfa and a lot of them other things you overheard them professor of ignoramy say and then everything goes wrong. Let Western Farm Life have the benefit of that thar kind of advice you give and let the farm alone till we git the crops in and then come home, and you'll be harmless, because we'll furgit by next spring what you told us in winter. Tom, I ain't got nothin' ag'in scientific farmin' except thet you're engaged in it; otherwise I think it's just the thing. We got a hay hand two weeks back but he was from the college. He made a map every mornin' after breakfast of what he was plannin' to do that day, and carried a little red book in his pocket where he put down all he done. In the evening he would write this in on his diagram. He said he was makin' a survey of farmin' conditions and he give me a big sheet of paper which he called a questioner and said fur me to fill it out before he left, so's he could use it fur datta. The third day he suddently dropped his fork and sez: "Boys, I got to quit. I lost my compass and cain't make no diagrams without it, so I got to go into town before I kin keep on with my survey of conditions." He left that evenin'. He was a nice young feller but I couldn't hep feelin' kind-a sorry fur him. He give me his mother's address and I'm goin' to write to her and have her git him a job somewheres in town as a window trimmer. His clothes is too nice fur ranch work and he's too well eddicated. He didn't have no surveyin' instruments and didn't look like no surveyor to me. The boys kind-a suspicioned he might-a been a spy, figgerin' out a way to bring the German army down on Fort Collins by the way of Rist Canon, but I don't take no stock in that theory. I think he was jest a harmless college boy applyin' his scientific knowledge fur the fust time, and I guess he found out that eddication didn't make pitchin' hay no easier.

Now about that hen. I don't know what to do, but with all your scientific trainin' you got in them short course lectures, why don't you give me somethin' that'll make her set? Ask your friend Vaplon, or whatever his name is, to show if he really knows somethin' that'll work. If he's a chicken expert now's the time fur him to show it.

Yours lovingly,

JOSEPHINE.

Well, I showed her letter to Vaplon and he said fur me to give her this advice: Because of her sex the hen is naturally contrary, but highly susceptible to flattery and frequently changes her mind. If I had a broody hen and she wouldn't stay on the eggs I'd promise her a new hat or a pair of silk stockings. I hain't wrote that to Josephine yet and I reckon it'll be better fur Vaplon if I don't.

THOMAS JEFFERSON PUTNAM.

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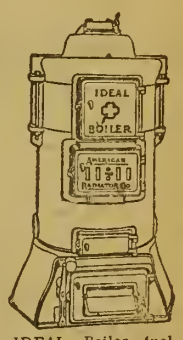

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Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and thru the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Bees Hive in Walls

We have a swarm of bees which entered a knothole in our house. Is it possible to hive them, or would it be advisable to stop up the hole and kill them?—A. M., Elbert Co.

The best way of getting the bees out of the cavity is to place a bee escape over the hole, so that the bees can come out but cannot return. A cone of wire-cloth about 8 inches high, with a hole at the apex just large enough for one bee to pass thru, will serve as a bee escape. If you cannot make one, they can be bought from bee supply houses. A new hive for the bees is placed as near the entrance of the hole as possible. The queen cannot be obtained in this way, but as brood emerges the younger bees leave the cavity and join the bees in the new hive, until finally the queen is left practically alone. A new queen should be provided for the bees in the hive as soon as possible. After about four weeks the bees will be nearly all out of the cavity. The honey that has accumulated in the cavity can then be removed by enlarging the opening.

Cowpox in Herd

What is the matter with two of my cows, one a seven-year-old? A few days ago I noticed on the lower part of her left front teat, while milking, a small swelling and some inflammation. The next milking there was a blister about as large as a nickel, of a bluish color and creamy colored around edges, and the next milking some pus. Now, her second heifer calf, a three-year-old with her second calf, has developed the same symptoms except the blisters appear just above the teats in the lower part of the bag in the edge of the hair. Both back quarters are affected as well as the right front quarter. Her first blister or swelling appeared July 12th and is now only a scab about as large as a dime. The second appeared one day later and is now running a little, and the third appeared yesterday and has not discharged any pus yet. Both cows are heavy milkers and good breeders.—H. W. W., Burns, Wyo.

Your description of the symptoms indicates cowpox. At first there may be some fever but it is usually so slight that it is scarcely noticed. In a few days there will be an eruption of the udder and teats, consisting of small red spots, which are painful and hot. Within a few days these spots contain a bluish liquid which soon becomes converted into yellowish matter. In milking these spots are broken and the pus runs out; or if not broken that way they will burst of themselves, after which a scab forms, which drops off in the course of ten or twelve days. During the eruptive and scabby stage the milk should be drawn off with teat siphon, to save pain and trouble and the milker should not milk other cows, as the disease is easily communicated to other cows. No treatment is needed unless the udder becomes swollen and painful. In that event bathe the udder with hot water and poultice with flaxseed or bran.

Homestead Rights

I have taken up a homestead of 160 acres in Chaffee county and made final proof on same and have sold it. How can I take up 160 acres in Park county under the 320-acre homestead law?—E. R., Canon City, Colo.

If the 160 acres on which you have made final proof and sale in Chaffee county is dry farming land, you are entitled to an additional 160 acres of the same class of land under the enlarged homestead act.

Russian Thistle Ensilage

Does Russian thistle make good ensilage? Can you tell us what stage it should be in to make the best ensilage—late or early?—H. W., N. Mex.

Russian thistle is not a very satisfactory hay or ensilage crop. However, some farmers have made such use of it. For ensilage the thistle must be cut while it is still green and before the stems have begun to harden and turn brown. It makes a fairly good feed, especially when put into the silo with cane or kafir, but is recommended only in cases where a cultivated crop is not available. If it is used as hay it must also be put up early, as it has no value if left to ripen.

Refuse to Fix the Road

1. The traveling public have been going across my place to avoid a hill on the section line that has not been worked since the grade was washed out. Last October I notified the county commissioners that I was soon going to fence this land and would like to have them see about fixing the hill, all of which they said they would do. I have put in the fence and they refuse to do anything with the hill. People who travel this road come thru my corrals and barn and house yard, do not get gates properly fastened, and my stock gets in the yard when we are away. The last time the cattle were in my young orchard and damaged it considerably. Is there any way to compel the commissioners to see that this hill is made passable? If so, how should one go about it?

2. If they are not obliged to fix the hill, what can I do to prevent damages that are always happening when gates that should be securely fastened are left down or insecurely fastened?—E. E., Kit Carson Co., Colo.

1. If the county commissioners will not make the repairs to the hill road at your request, we would suggest that you draw up a petition and have it signed by yourself and neighbors who use the road. The commissioners will probably pay more attention to the request if it comes from a number of taxpayers. There is no way by which you can compel them to take action except by creating public sentiment for the desired improvement.

Knock-Kneed Colt

I have a colt two months old which was born knock-kneed in one front leg. I thot it would straighten, but it is still crooked. Is there any way I can cure it?—W. T. M., Cortez, Colo.

We have failed to accomplish much in trying to straighten the crooked legs of colts. It seems impossible to keep any kind of a brace in place long enough to accomplish anything. If the leg is bowed in it will be well to keep the outside of hoof cut lower or even apply a shoe lower on the inside. I do not know how to advise you better.—G. H. Glover.

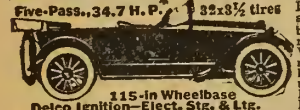
Lumps on Colt

I have a mare colt three months old that has small lump at mane. It gets larger and seems to be sore when pressed. Please give me remedy for same. The skin on some of my cows seems to be grown to their backs and stuck. Please give me cause and remedy.—J. M., Weld Co., Colo.

The "lump" on the colt may be an abscess resulting from strangles, or it may be something entirely different. You had better show it to your veterinarian. When the skin sticks to the back or ribs it is because there is an absence of fat, and feed is the best remedy. There may be warbles on their backs which, however, should disappear by the last of July.

Driver Agents Wanted

Drive and demonstrate the Bush Car. Pay for it out of your commissions on sales. My agents are making money. Shipments are prompt. Bush Cars guaranteed or money back. 1918 models ready. Write at once for my 48-page catalog and all particulars. Address J. H. Bush, Pres. Dept. 9H



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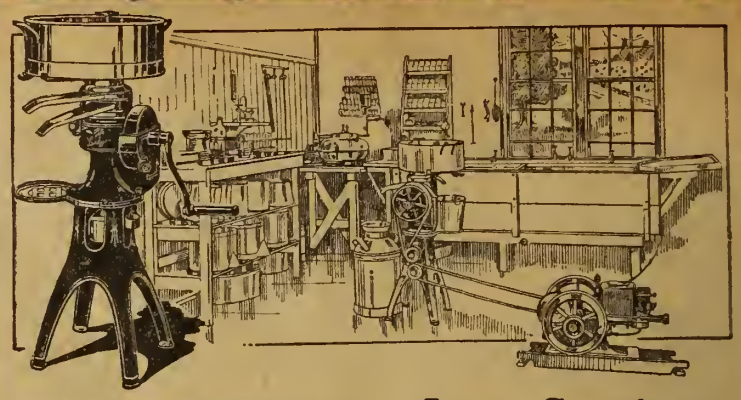

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The reasons for this popularity — boiled down — are that **Lily** and **Primrose** separators separate all your cream from your skim milk, and do it for years, always keeping up to the same level of close skimming, run with surprising smoothness and ease, and are very easy to keep in clean, sanitary condition. Across the double center of our **Lily** catalogue and our **Primrose** catalogue is a large, clear picture showing the working interior of these separators, explaining and indicating by arrows why they save you so much cream money. These catalogues are complete, fully illustrated, and very interesting and instructive, if we do say so ourselves.

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Feed the Fighters! Win the War!

Harvest the Crops! Save the Yields!

On the battlefields of France and Flanders the United States boys and the Canadian boys are fighting side by side to win for the world the freedom that Prussianism would destroy.

While doing this they must be fed and every ounce of muscle that can be requisitioned must go into use to save this year's crop. A short harvest period requires the combined forces of the two countries in team work, such as the soldier boys in France and Flanders are demonstrating.

THE COMBINED FIGHTERS IN FRANCE AND FLANDERS AND THE COMBINED HARVESTERS IN AMERICA WILL BRING THE ALLIED VICTORY NEARER

A reciprocal arrangement for the use of farm workers has been perfected between the Department of the Interior of Canada and the Departments of Labor and Agriculture of the United States, under which it is proposed to permit the harvesters that are now engaged in the wheat fields of Oklahoma, Kansas, Iowa, North Dakota, South Dakota, Nebraska, Minnesota, and Wisconsin to move over into Canada, with the privilege of later returning to the United States, when the crops in the United States have been conserved, and help to save the enormous crops in Canada which by that time will be ready for harvesting.

Help Your Canadian Neighbors When Your Own Crop Is Harvested

Canada wants 40,000 Harvest Hands to take care of its

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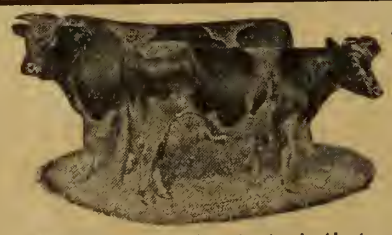
One cent a mile railway fare from the International Boundary line to destination and the same rate returning to the International Boundary. High wages, good board, comfortable lodgings.

An Identification Card issued at the boundary by a Canadian Immigration Officer will guarantee no trouble in returning to the United States.

AS SOON AS YOUR OWN HARVEST IS SAVED, move northward and assist your Canadian neighbor in harvesting his; in this way do your bit in helping "Win the War."

For particulars as to routes, identificaton cards and place where employment may be had, apply to Superintendent of Immigration, Ottawa, Canada, or to

J. L. PORTE, Canadian Gov. Agt., Dunn Blk., Great Falls, Mon.



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In Motor Cars, Which the Latest Mitchells Meet

Today the men who know cars best don't want too light a car. On country roads such cars cannot endure. And thousands have now learned that.

Now the demand is for superlative endurance. The fine-car buyer wants a lifetime car. He buys a car to keep.

Three years ago Mitchell engineers started to meet this want. They adopted the standard of 100 per cent over-strength, which is twice the usual margin of safety. Now the Mitchells, in all important parts, comply with that new standard.

All safety parts are vastly oversize. Castings are almost eliminated. Over 440 parts are made of toughened steel. And we use a wealth of costly Chrome-Vanadium.

Average repair cost has been reduced some 75 per cent. Car life has been multiplied, we think. Two Mitchells that we know of have already run over 200,000 miles each. That is 40 years of ordinary service. And since this standard was adopted, not one rear spring has broken. Yet owners say it is the easiest riding car on the market. To most car buyers, this over-strength is the chief attraction in the Mitchell cars.

Nothing to Buy

In former times, nearly every car buyer bought some extra features. He found things missing which he wanted on a car.

We have examined thousands of new cars to learn what those extras are. One by one we have added them to Mitchells. The latest Mitchells have 31 features which are rarely included in cars.

A power tire pump, for instance, reversible headlights, shock-absorbing springs, a dashboard engine primer, a locked compartment, a light in the tonneau, etc. So the Mitchells combine in a single car nearly every known attraction.

Lasting Beauty

The demand today is for beauty that endures. We have spent vast sums to meet that. Now the finish coats on Mitchells are fixed by heat, so the luster lasts. We use extra-grade leather to get durable upholstery. In the past year alone we have added 25 per cent to the luxury cost of the Mitchell, so the cars will long look new.

No Extra Cost to You

These things are expensive. Yet note that Mitchell, in both sizes, undersells its rivals.

That fact is due to John W. Bate, the famous efficiency expert. He has spent years of time and millions of dollars to create here a model plant. It now covers 45 acres. And from end to end it is built and equipped to produce this one type economically.

We build the whole car—chassis and body—under these efficiency methods. We build the parts which most car makers buy. And we build them at the lowest factory cost.

That saving amounts to millions of dollars. And that is what pays for these extras.

The Mitchell comes in two sizes, at two prices. But the types are identical. Both embody the same extreme standards. Both are built to render lifetime service.

These cars have scores of distinctions. Go see them and see what they mean to you. If you don't know the nearest Mitchell dealer, ask us for his name.

Mitchell SIXES

TWO SIZES

Mitchell—a roomy 7-passenger Six, with 127-inch wheelbase and a highly-developed 48-horsepower motor.

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Four-Passenger Roadster, $1560. Sedan, $2240. Cabriolet, $1960. Coupe, $2060.

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Mitchell Junior—a 5-passenger Six on similar lines with 120-inch wheelbase and a 40-horsepower motor. ¼-inch smaller bore.

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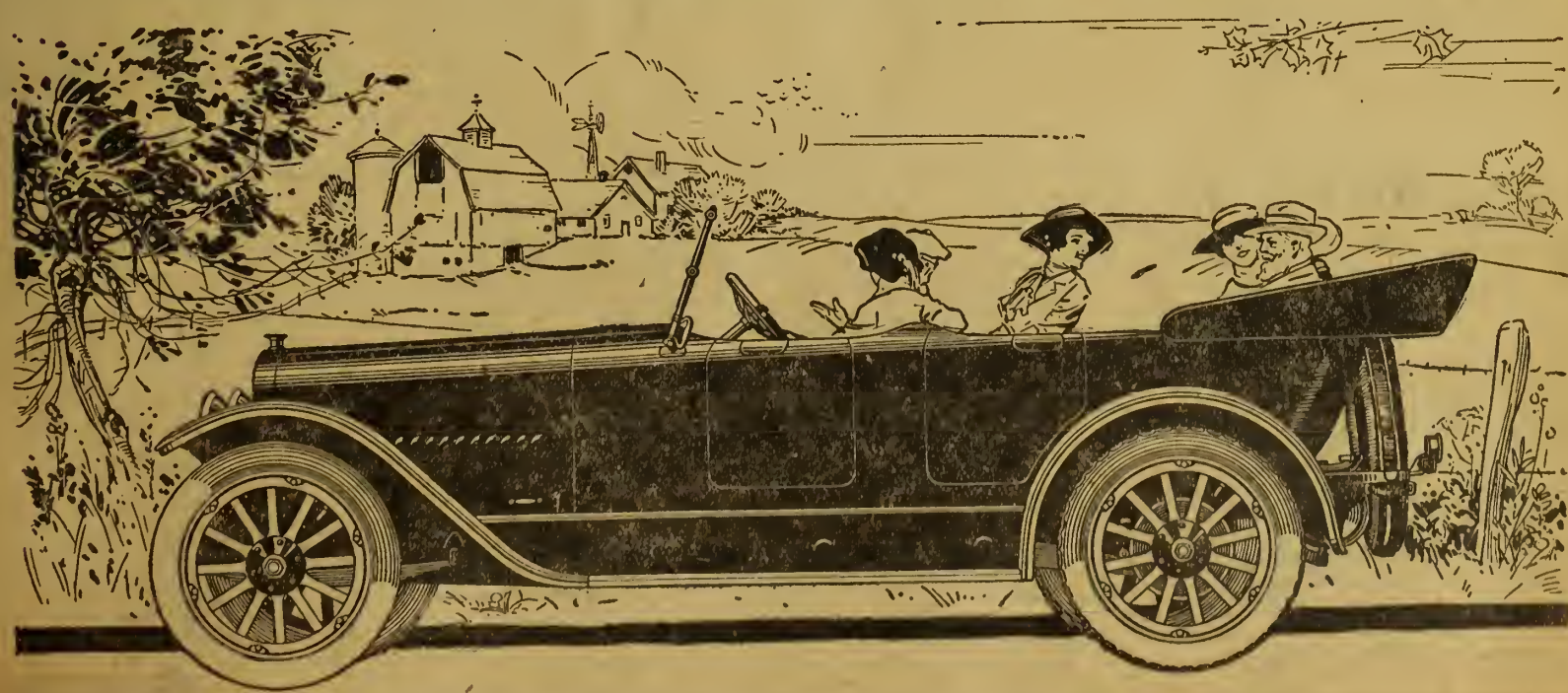

The Farm Home

MRS. H. T. FRENCH

Questions about home problems promptly answered by letter and thru the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

Women County Agents

The emergency food bill just passed by the U. S. congress provides among other things for increased activities in the extension work under the co-operative arrangement between the U. S. Department of Agriculture and the Colorado Agricultural college.

Seventeen thousand dollars is appropriated to assist in extending the woman's work by placing County Women Home Demonstration Agents in the field on the same basis as County Agricultural Agents. It is expected that counties wanting this work will assist in defraying a portion of the expenses of such agents.

Now is the time for the rural women's clubs to get busy in making their wants known by writing the State Leader of Women County Agents at the college, or to the Director of the Extension Service, C. A. C., Fort Collins, Colo.

September

Hark! Thru the dim woods dying
With a moan,
Faintly the winds are sighing
Summer's gone!
—Mrs. Norton.

The Golden Glow is waving its yellow blossoms along the line fence; the corn, the wheat, all the year's harvests are golden in their generous return for loving labor given. May every heart have its gold to give on this glad September day, proving to all the world that the Master Reaper is ever turning the labor of head, hand and heart into a golden harvest.

To You

While during this "good old summer time" too busy even to write to each other, our thoughts have been a medium of encouragement and helpfulness, we also realize more than ever that outside the sacred precincts of home with its numberless duties and family cares, we are ever in debt to the blessed world.

It has been brought home to us that it is not enough to improve our own conditions by thrift and economy, but that we must reach out to those about us, ever widening our circle of helpfulness with a hearty desire to contribute our share that the world may be better for our having lived in it.

How shall we both as individuals and by co-operation pay our obligation to each other? Is it not possible in connection with this Home Department of Western Farm Life, to make our rural homes and communities happier and more useful one to the other? Each season should mark a new beginning in life as in nature and always on the side of improvement.

As the editor has said before, we are more than gratified by the letters of praise and helpfulness received from the readers of these columns, but we are not satisfied. We desire to make the department more helpful and to receive encouragement and help from a greater number.

Comfort Indoor Closet

ODORLESS SANITARY GERM-PROOF

Every home without sewerage needs one. Most convenient, meritorious home necessity in a century. A boon to sick people. Can be placed anywhere in house.

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Put a warm Comfort Toilet in your home; a guarantee of healthy, sanitary conditions. Germ-life killed by chemicals in retort. Emptied once a month—no more trouble than throwing out coffee grounds. Needs no other attention. Boards of Health endorse it. Write now for literature, prices, etc. Agents wanted.

THE COMFORT CHEMICAL CLOSET CO.
1650 Champa, Denver, Colo.

The advantages of organization for mutual helpfulness cannot be overestimated and the following are some of them: It makes weak women stronger mentally, morally and physically. It guides and controls the thots of strong women into lines which bring about the best results.

Second—It gives assurance to timid women to hear others speak out their own unexpressed thots.

Third—It leads the too careful housekeeper to become the loving, cheery home-maker.

Fourth — It makes the thotless woman think.

Fifth—It shows the idle woman how much there is to do in this busy world.

Sixth—It teaches the working woman how best to use her strength, and also how much is being done in the present era to lighten her burdens.

Seventh—Finally, it teaches all women how best to conserve their rambling activities and make them of most use to God, man and themselves.

Too often we are so engrossed with "our way" that we completely forget "the best way for the good of the many."

Love much. There is no waste in fully giving; more blessed is it than to receive. He alone who loves much finds life worth much. Love on thru doubt and darkness and believe there is nothing which love may not achieve.

Uses for Melon Rinds

If your melons are fresh from your own garden it will not be so difficult to procure just the right sort for preserving or pickling. They should be young and reasonably ripe. The delicious deep pink of the center should be crisp, for if of pale tint and soft to the touch the melon was either picked too green or from a dead vine. When the melon is overripe you can discover small, clear blisters on many of the seeds. Choose the melon the rind of which is without spot or blemish, first testing it by scraping up a bit of green skin with the finger nail. If the skin comes up easily bringing a little rind with it, the chances are that the melon is fresh. One writer says that skin that slips leaving bare a smooth surface indicates a melon you had better pass by. Perfect melon flesh is crisp, firm, juicy, with a fine fragrance free of strings or hard cores at the heart. The color of the seeds does not always signify if the melon is ripe and perfect. It has been found that either red or the lemon variety of the watermelon with black edged light brown seeds are better flavored than any others.

Have you saved watermelon rinds from the beginning of the season? If so, they can be used in many delicious ways with only a little trouble. Fill a jar with a good brine strong enough to float an egg and as the rinds accumulate put them into the brine, first paring off the outer rind, then cutting it up into desired size pieces. Cover with a plate to keep the pieces well under the brine. You need not be afraid of the rinds getting too salt. They should not be used until the last installment of pieces has been in the brine at least a week. Then for pickling they should be freshened. Wash clean, scald one minute in boiling water, take out and soak in cold water over night. In the morning draw off this water and add fresh to eliminate all traces of saltness; it usually takes three changes of water. Then the pieces are thoroly washed again and any pieces that feel soft are thrown out.

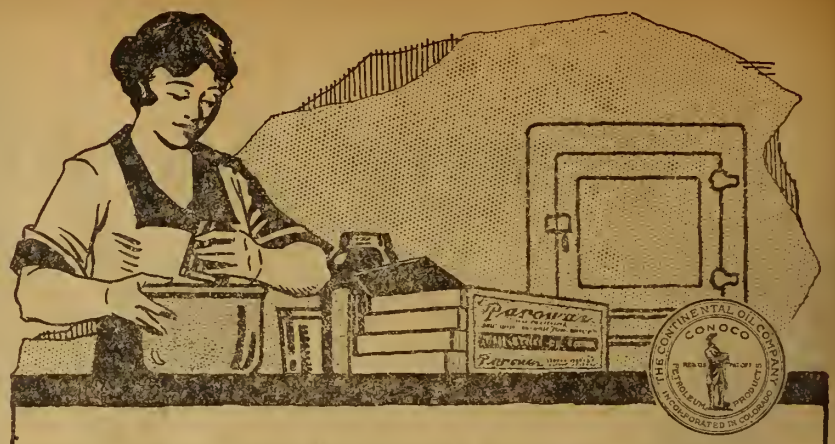
Sweet Pickle—Weigh the rind. to 5 lbs. of rind take 3 lbs. sugar and 3 pints of vinegar. Mix sugar and vinegar together and bring to boil. Skim well and pour boiling hot over the rind which has been packed in a stone crock or glass jar and highly seasoned with nutmeg, mace and the grated yellow rind of lemons. Next day, drain off syrup, boil up again, skim and return to jar. Repeat twice then place whole amount in a preserving kettle, let it boil three minutes, adding the strained juice of half a dozen lemons. Boil one minute longer, pour into jars, tie covers over and let stand for a week before using.

Sour Pickle—Take rind from brine and scald lightly in weak vinegar. Drain and pack in jars, with layers of spices between. Cover an inch deep with cold cider vinegar. Drop in lumps of sugar that have been well rubbed on a lemon rind, cover lightly and let stand a week.

Cucumber Pickles

(Without Boiling or Cooking)

Take a quart glass jar and in the bottom put a tablespoon of salt. Wipe small cucumbers dry, pack the jar full and then cover to the top with good vinegar and screw on the top. (Be sure the rubber is a good one.) If you wish sweet pickles, sugar and spices can be put in the jar with the salt.—Mrs. W. H., Guerin, Idaho.



Save The Fruit You Preserve

by double sealing the jars. After putting on the cap, just dip the whole top in Parowax. Then air can't get in to start fermentation.

Jellies cannot mould if Parowax is poured into the tops of the glasses.

Parowax is tasteless and odorless; guaranteed under the Pure Food and Drugs Act.

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THE CONTINENTAL OIL COMPANY
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Parowax

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All Patterns 10c each. Address WESTERN FARM LIFE, Pattern Department, 14th and Arapahoe, Denver, Colo.

2158—Practical and Comfortable Undergarment. Cut in sizes small, medium, large and extra large. Requires 3¼ yards 36-inch material for medium size. Muslin, cambric, lawn, batiste, satin or silk may be used for this model.

2144—Simple House Dress. Cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Requires 6¼ yards 36-inch material for 36-inch size. This model is splendid for gingham, chambray, linen, lawn or percale, or flannel, cashmere and challie. The fullness is held at the waistline, over sides and back by a belt.

2134—Practical Suit for the Growing Boy. Cut in sizes 4, 6, 8 and 10 years. Requires 3 yards 36-inch material for size 8. This model is ideal for warm weather with the low neck and short sleeves and the trousers with straight lower edge. Linen, drill, khaki, galatea, gingham, pique, serge or corduroy may be used.

2151—Simple, Popular Girls' Dress. Cut in sizes 2, 4, 6 and 8 years. Requires 3¼ yards 24-inch material for 4-year size. This is such a comfortable style for school or play dress and so easy to develop. It is nice for dimity, lawn, batiste, gingham, gabardine, challie, poplin, repp and serge.

Story of the Kenthurst Farm

Continued From Page 4

such mellowness that the plow fairly sinks into the ground. It is on such soil deposits that the mountain farmer grows root crops and small grain of unusual size and quality.

Kenthurst's cultivable valley land lies at an altitude of 8,300 feet, but the pasture runs up as high as 8,800 feet, and there are aspen groves in the upper swales that, when cleared, will make good fields for potatoes, oats, barley and field peas.

Over on a neighbor's place, the farm of H. B. Smith, I saw a potato field on a steep mountainside which had been turned with a side-hill plow, the width of two furrows being left unbroken every forty feet to break the force of washing rains. Such rains are not frequent. Most of the summer moisture comes in gentle showers that do no damage to the soil, and winter snows cover the ground until late May, melting so gradually that most of the moisture soaks in. The snows account for the prolific growth of pasture grasses; the rarefied atmosphere for the intense sunshine of the short summer in which plants reach maturity quickly. The summer climate in that respect resembles Alaska and other far northern latitudes, where, in spite of a very brief period free from killing frosts, many temperate zone crops grow to maturity in a shorter period, and reach a greater size, than in their native habitat.

Timothy, alsike and alfalfa are the chief forage crops at the 8,000-foot elevation and potatoes the principal cash crop. One farmer, Henry Winiger, an old settler at Pinecliffe, gets from $1,000 to $2,500 a year on a three-acre patch of potatoes. His main dependence is beef cattle. He has usually 50 to 75 head, raising alfalfa, oats, hay and other forage and running the cattle on the rich grasses of Boulder creek in summer.

On Kenthurst Farm a patch of potatoes 80x60 feet in 1916 yielded 1,200 pounds. Turnips and rutabagas yield proportionately. For the latter Mr. Kent got as high as $4 a hundred from the Brown Palace hotel in Denver, for table use. Crispness of mountain-grown vegetables gives them an attractive market at the big hotels. Carrots, parsnips, salsify, onions and beets are put in the cellar along with the potatoes, furnishing a vegetable diet thruout the winter. Beets are pickled, peas canned and dried, rhubarb is jellied, pigs cured for pork, rabbits shot and occasionally grouse in season. All these things go to make living comfortable and economical.—A. T. S.

Profitable Farm Poultry

W. E. VAPLON

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries Poultry Department, Western Farm Life, Denver, Colorado.

Can Some Chicken

Never before was there so much canning of garden products as this summer. It goes without saying that many people will can things at the expense of jars, rubbers, fuel and time that could safely be kept by drying or storing, but there are several reasons why everyone having a surplus of poultry should put away some in cans.

Here are four reasons for canning:

1. Price received.
2. Convenience.
3. Cost of feed.
4. Health of flock.

Price: There is an unusually large amount of poultry in cold storage and unless dealers put down the price of this cold storage stuff it will not move fast enough to insure to the farmer a good price for his poultry this fall. Beginning two months from now and up to the holidays, the bulk of the poultry crop will be sold, and unless the packers can use large quantities for storage, prices are pretty sure to tumble. Anyhow, prices will be low compared to the prices of other meats and producers will not only help to relieve the situation by putting away much of their own product for future use, but will also be preserving a cheap meat against the time of comparative scarcity.

Convenience: It is not always possible to get a chicken ready for the table when company unexpectedly drops in; neither is there fresh meat on hand all the time. Mighty nice to go to the cellar, find a nice chicken, can of peas, one of pickles, another of fruit, and have them all nicely served up in a very few minutes' time.

Cost of Feed: Counting the cost or value of feeds, the loss from disease or accident, it does not pay to keep poultry good only for the table on hand for several months. Roup cannot get the canned chicken, neither does the chicken eat expensive feed nor require care.

Health of Flock: This is not the least thing to be considered. Crowding is a very great evil, especially during the months of changing weather. Few farmers have sufficient house room for the flock, and thinning out or culling would give the remaining fowls a better chance for development and lessen the danger from contagious diseases.

Here is the way to do it, as explained in Farmers' Bulletin 839:

Spring Chicken, Fried.—After cleaning and preparing spring frys, season and fry as the preparing for serving directly on the table. Cook until the meat is about three-fourths done. If a whole spring chicken, break the neck and both legs and fold around body of chicken. Roll up tight, tie a string around the chicken, and drop this hot, partially fried product into hot quart glass jar or enameled tin can. A quart jar will hold two to four small chickens. Pour liquid from the griddle or frying pan into the container over the chicken. Place rubbers and caps of jars into position, not tight. Cap and tip tin cans. Sterilize for the length of time given below for the particular type of outfit used:

	Minutes
Water bath, home-made or commercial	90
Water seal, 214 degrees	60
5 pounds steam pressure	40
10 to 15 pounds steam pressure	30

In a similar way any fowl or wild game may be prepared by frying, oven-baking, roasting or stewing. The meat products which may be canned in this way include beef, pork, Hamburg steak, sausage, venison, rabbit, squirrel, raccoon, opossum, lamb, and all types of sea food. All may be packed after cooking three-fourths done in any desired way. Hot glass jars or enameled tin cans may be used. When the products are packed while hot in the containers the hot liquids, gravies, dressings, etc., or hot water should be poured over them. Put rubbers and caps of jars into position, not tight. Cap and tip tin cans. Sterilize for the length of time given above for the particular type of outfit used.

Federal Farm Loan Money for Colorado Farmers

Continued From Page 3

do the current business for these borrowers, who will have more such business to transact because the drag on them of a 3 or 5 year 7 or 8 per cent land mortgage has been relieved."

I heard of one case where a lawyer advised a farmer against taking the government money, after his application had been filed. He did it by misleading the farmer on the question of the liability assumed by a member of a National Farm Loan association. This farmer got the money he wanted for renewal of a loan at a bank, but when he finally discovers that the facts have been misrepresented it is safe to assume that neither the lawyer nor the bank will be benefited. The time for opposition to rural credits by private financial interests has gone by and bankers who have real business capacity are accommodating themselves to the change and not suffering thereby.

Misunderstandings Cleared Up

Misunderstandings arising over valuations are being gradually cleared up. In some cases the applications, especially from dry land sections, were far in excess of what the Federal Land bank deemed a safe amount. In these instances efforts have been made to reach a satisfactory compromise. There have been a few withdrawals but generaly speaking, the borrowers have decided to accept the government appraisement, after the plan and policy of the district bank was fully explained. The following quotation from the farm loan law governs the appraisement:

"No such loan shall exceed 50 per centum of the value of the land mortgaged and 20 per centum of the value of the permanent insured improvements thereon, said value to be ascertained by appraisal, as provided in section 10 of this act. In making said appraisal the value of the land for agricultural purposes shall be the basis of appraisal, and the earning power of said land shall be a principal factor."

Disputes over questions of value have, in most cases, been traced to the impression that borrowers were entitled to a minimum of 50 per cent on the land. As a matter of fact, 50 per cent is the maximum, the language of the law being "no loan shall EXCEED 50 per contum of the value."

Under this provision the loan may be LESS than 50 per cent of the actual value of the land, circumstances governing the appraisement. In explaining the policy of the district bank one of the officers said: "The life of the farm land banks depends upon the sale of the 4½ per cent bonds. The people who will furnish the money for lending to the farmers will carefully investigate the security. We expect to make the system absolutely safe from the bottom up, to insure the confidence of the investing public, and provide a constant and attractive market for farm loan bonds. Conservative appraisements are not only a guaranty of the safety of the bonds, but of the loans and, consequently, a protection for the borrowing farmers."

Details About Limon Association

The Limon National Farm Loan association was the first in the dry farming territory of Colorado to get funds. Eighteen farmers in western Lincoln and eastern Elbert county received a total of $39,700, the great bulk of which will go for farm improvements and livestock. Only a small percentage of these farmers will use the money to liquidate indebtedness. The payment of this sum by the government means just so much new capital distributed in a district where private money lenders have been taking a toll of from 8 to 10 and 12 per cent on short time money. The government system steps in with 5 per cent money on 36 years' time, paid off on the amortization plan. The addition of only 1 per cent to the interest payment wipes out the principal in thirty-six years.

To make it plainer: A farmer securing a loan of $1,000 pays $30 every six months for thirty-six years, which sum takes care of the interest and wipes out the principal in that period.

The eighteen farmers in the Limon dstrict all chose to make their loans on the 36-year basis. They have the privilege of paying off all or any part of the sum on any interest-paying date after the loan has run for five years.

Here is a partial list of the Limon borrowers and the amounts allotted to each:

Louis R. Ramsey, $1,000; Jacob E. Lauderman, $2,000; Thomas Pitcher, $2,000; Ole T. Einertson, $1,000; Benjamin M. Smith, $2,000; Austin L. Thompson, $1,800; J. W. Hunter, $1,500; William E. Jordan, $2,200; Charlie W. Burgess, $2,000; Howard S. Phend, $2,000; Moses D. Troyer, $2,200; Clarence R. Pearson, $2,000; John Johnson, $1,000; David U. Campbell, $2,000; Emil Johnson, $1,000; Charles D. Barnes, $1,500; Ernest Hamlin, $1,000; Reuben J. Yutzy, $1,500.

Charles A. Wells, secretary-treasurer of the association, is a resident of Limon and is not a borrower. The law specifies that this officer need not be a borrower, but all others in the association, whether officers, directors or merely members, must be borrowers, or applicants for loans.

In the Limon district the appraisements ran from $500 to $1,100 per quarter section. It must not be understood, however, that these figures establish a precedent for that class of land. It is the policy of the bank to handle each association on its own merits and each individual piece of land is gone over by the fedcral appraiser in checking up the values fixed by the local loan committee. While the amounts allowed in the Limon district were not up to one-half the actual productive value of the farms, the borrowers are satisfied with the sums. The money goes back into the farm, increasing the owner's borrowing capacity, in case he wants a larger loan later on.

The system is in excellent working order and seven appraisers are busy in various sections of Colorado. Headquarters have been established in Room 928 Foster building, Denver, with A. D. Wall, chief appraiser for Colorado in charge. The other appraisers are J. W. Bowman, F. B. Davis, C. C. Evans, J. B. Funk, J. U. Harris and John Lennox.

He who has conferred a kindness should be silent, he who has received one should speak of it.—Seneca.

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The hogs grind their own grain, thus saving feed and labor. Mill will care for 30 hogs at full feed and is easily and quickly operated by hogs weighing 40 pounds. Grinds all kinds of grain, keeping clean, fresh and sanitary always.

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Use any Injector, but Cutter's simplest and strongest.

Prices:

10 dose pkge. Single pills	$1.00
50 dose pkge. Single pills	4.00
10 dose pkge. Double Pills	1.50
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Insist on Cutter's. If unobtainable, order direct.

Write for new booklet, "The Control of Blackleg." It tells about Anti-Blackleg Serum which cures Blackleg and may be used simultaneously with vaccine to combat outbreaks and safely protect valuable stock.

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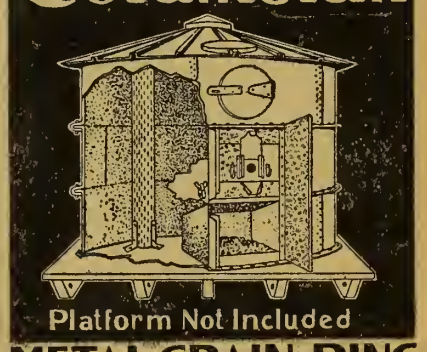

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Columbian Metal Bins are made of best quality galvanized or enameled metal—No. 20 ga. in the walls. Substantially constructed with reinforced bolted joint. Everything furnished complete—no extras.

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CORN HARVESTER Self Gathering for cutting Corn, Cane and Kaffir Corn. Cuts and throws in piles on harvester. Man and horse cuts and shocks equal to a Corn Binder. Sold in every state. Price only $22 with fodder binder. The only self-gathering corn harvester on the market that is giving universal satisfaction. Dexter L. Woodward, Sandy Creek, N. Y., writes: "3 years ago I purchased your Corn Harvester. Would not take 4 times the price of the machine if I could not get another one." Clarence F. Huggins, Specmore, Okla.: "Works 5 times better than I expected. Saved $40 in labor this fall." Roy Apple, Farmersville, Ohio: "I have used a corn shocker, corn binder and 2 rowed machines, but your machine beats them all and takes less twine of any machine I have ever used." John F. Haag, Mayfield, Okla.: "Your harvester gave good satisfaction while using filling our Silo." K. F. Ruegnitz, Otis, Colo.: "Just received a letter from my father saying he received the corn binder and he is cutting corn and cane now. Says it works fine and that I can sell lots of them next year." Write for free catalog showing picture of harvester at work, and testimonials.

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Dairying and Hog Raising

GEO. E. MORTON

Free advice on the commercial or technical features of dairy farming and hog production. Please address your letters to DAIRY DEPARTMENT, WESTERN FARM LIFE, DENVER, COLO.

A Breeder's Guarantee: Many men who only occasionally purchase a breeding animal do not know just what sort of a guarantee they may reasonably expect with the animal. Where the purchaser and the seller are fair-minded there will not be much difficulty, but occasionally there is a breeder who is unscrupulous in filling a mail order, and also there are occasional buyers who are wholly unreasonable in their demands upon a breeder. The understood guarantee which goes with every animal from a reputable breeder's herd is that the animal shall be bodily sound so far as evidence to the eye is concerned, and is free from tuberculosis or other communicable disease when so stated in connection with the sale; for when a breeder advertises that his herd is tuberculin tested and free from abortion, the guarantee applies to every animal sold from the herd. Even when a herd or an animal is not so advertised, a breeder with sound standing in the trade will make good on these two diseases. If the animal is of breeding age, the implied guarantee goes with it, whether stated or not, that the animal is a breeder. Evidence of this fact commonly accepted by stockmen is that the animal shall have produced progeny immediately prior to the sale, or shall produce progeny shortly after the sale. Purchasers of animals finding that they do not come up to these requirements may reasonably request adjustment of their claim by the seller. No matter how honest or careful a breeder may be, he cannot, in doing a large business avoid occasionally disappointing a purchaser in some one of these respects. He can practically always avoid shipping a diseased animal, but in selling an untried young male of breeding age, he cannot know positively that the animal is a breeder and must accept the small percentage that fails. The usual method of adjustment is to have the non-breeder sold to the butcher and the difference between the sale price and the original purchase price of the animal is returned to the purchaser, or applied on another animal if so requested. When the animal in question is a female of breeding age sold as unbred, the adjustment is the same. When sold bred and it is found later that she is not with young, the usual adjustment is for the breeder to return the purchase price of the animal; the animal o be shippetd back, breeder paying expenses both ways; or, if preferred by the purchaser, the breeder refunds one-fifth of the purchase price. Where the animal goes wrong in the hands of the purchaser, although a perfectly healthy animal and a proved breeder while in the hands of the men who bred him, the breeder is in no way liable, because he can guarantee nothing as to the care or health of his animals in the hands of a new man.

Passes 35-Pound Butter Mark

On Thursday evening, July 12, 1917, Aggie Wayne Cottage Knoll, the fine sturdy Holstein cow of Windsor Farm Dairy, passed the 35-pound butter mark by 69/100. In the seven days she produced 498.3 pounds of milk on an average of 71.1 pounds per day testing 5.7 per cent, amounting to 28.552 pounds of butterfat.

The day before her official test closed, M. H. Gardner, superintendent of A. R. O. of the Holstein-Friesian Advanced Registry, ordered the experiment station at Fort Collins to conduct a one-day retest. The result of the retest was satisfactory, she having produced in the one day, 74.7 pounds o fmilk containing 3.895 of fat.

Mr. Penrose states that no elaborate preparations were made on this cow before test and the record is extremely out of the ordinary in the fact that this is her first official test and made during such an unfavorable hot season. On account of the hot summer weather, the continuation of the test for a thirty-day record was abandoned.

Aaggie Wayne Cottage Knoll, now a six-year-old, is out of Duchess Aaggie Wayne DeKol and sired by Sir Johanna Cottage Knoll. The dam has no A. R. O. record, nor is the sire an Advanced Registry standard bull. She has one two-year-old heifer that made 18 pounds of butter at her first calving, and the latest addition to her line of breeding is a spry, well-marked little bull. With such a record, Aaggie Wayne Cottage Knoll stands the third cow in the state for butter production in seven days.

Sunflowers for Silage

The use of sunflowers for silage is becoming popular in the Grand Valley. A number of dairymen now look to sunflowers to supply winter succulence for milk production. The mammoth Russian variety is used for both soiling and ensilage. They are cut for silage just before they come into bloom, or about the time the heads are four inches in diameter. Mr. E. G. Pettengill says that a conservative estimate on the yield is 25 tons per acre. It takes sixty to seventy days to mature the crop in this vicinity. Sunflower silage is heavier than corn silage, and the cows will not eat as much as of the corn silage, but produce as much or more milk. This crop is especially adapted to the small farms in the fruit belt on account of the large tonnage per acre.

Salida Dairy Day

Two years ago Salida inaugurated a Dairy Day similar to the Johnstown and Holly Dairy Days. It was a pronounced success under the auspices of a local committee composed of J. M. O'Connell, Wm. Bozeman and M. W. Lazell. Another good Dairy Day was held a year ago and this fall a Dairy Day is planned which promises to far surpass anything yet attempted. Many cows have been shipped into the Salida district in the past few years and a Dairy Cattle Show will be held in connection with the Dairy Day celebration. The date has not yet been set, but will be some time in October. Breeders, particularly in the Divide country in the Arkansas Valley, should look ahead to this date and plan to be there.

Answer to J. S. M., Aspen

You are feeding probably enough grain feed to your cows, but cooking the corn chop does no good. Feed in the proportion of two quarts corn chop, two quarts oats and one quart bran. Oats, bran and flax seed are good for the calf. You should not use the corn, oats and bran in a gruel, however. Put them in a box dry where the calf can get to them any time. Use your flax seed in with the skim milk and you can discontinue the whole milk entirely. You do not need compound stock foods with the food stuffs you have on hand.

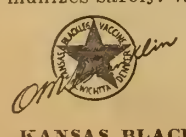
Answer to Pat, Des Moines, N. M.

It is quite probable that your heifer has a foreign body penetrating the lung having worked thru the stomach. It is also probable that she is in an extreme stage of tuberculosis of the lungs; in the latter case there would be danger in keeping her with the herd, and in the former case there would be none. You can make a tuberculin test by purchasing tuberculin and a hypodermic syringe for its injection from a reliable drug firm, asking for directions for making the test when getting the tuberculin. One must follow directions very carefully, and in a doubtful case the man making the test for the first time without instructions could not be absolutely sure as to whether the animal reacted. In a case like this, however, if the animal has tuberculosis at all the reaction will be marked enough so that you will know that she has the disease, as the temperature will shoot up several degrees.

BLACKLEG

Kansas Germ Free Fluid Vaccine

OVER 250,000 calves vaccinated and every one proved immune. Originated at Kansas Agricultural College by members of this Company. Being germ-free it cannot spread the disease and a single dose will do the work. It safely immunizes and immunizes safely. We tell you all about this vaccine and how to get it in our booklet, "No More Blackleg." Write and ask for one of these booklets. They are free.



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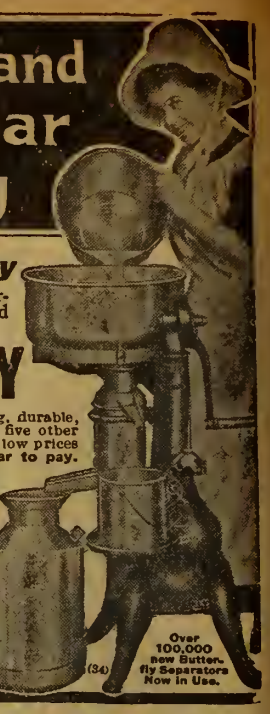

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You can now get one of these splendid money-making, labor-saving machines on a plan whereby it will earn its own cost and more before you pay. You won't feel the cost at all.

$29 BUYS THE NEW BUTTERFLY

No. 2 Junior—a light running, easy cleaning, close skimming, durable, lifetime guaranteed separator. Skims 95 quarts per hour. We also make five other sizes up to our big 800 lb. capacity machine shown here—all sold at similar low prices and on our liberal terms of **only $2 down and a year to pay.**

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You can have 30 days FREE trial and see for yourself how easily one of these splendid machines will earn its own cost and more before you pay. Try it alongside of any separator you wish. Keep it if pleased. If not you can return it at our expense and we will refund your $2 deposit and pay the freight charges both ways. You won't be out one penny. You take no risk. Postal brings Free Catalog Folder and direct from factory offer. Buy from the manufacturers and save money. Write TODAY.

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Boar and sow pigs with both size and quality. Our pure-bred swine have made prominent winnings every year in competition with prominent herds of the middle west.

Our Duroc-Jersey pigs are mostly sired by Orion Cherry King Again, a son of the Grand Champion Boar of America who won last year at the National Swine Show over the Grand Champions from all the leading State Fairs. This boar is the large, stretchy kind, and has sired the best lot of pigs we have ever had farrowed at the College. We bred the Grand Champion Sow at Denver last year, selling her to the Colorado breeder who exhibited her.

Our Poland-China sire weighed 820 pounds as a senior yearling and has good width and ham. Pigs by him for sale.

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Animal Husbandry Department FORT COLLINS, COLORADO

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Count Majesty Is Dead But I have two or three of his sons out of splendid cows that are excellent prospects for herd-headers; better secure one of them before they are gone. His sons are good—his heifers the finest prospects I ever saw. **Majesty Oxford Combination now at head of herd.**

In Durocs, have a litter (13) out of a daughter of Model Critic, by a son of Grand Model, that are good.

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Percherons, Belgians, Shires One of the largest breeding herds in the world. I can spare 75 young registered mares in foal to herd sires weighing 2,300 and 2,400 pounds. Two, three, four and five-year-old stallions, ton and heavier; also yearlings. As a producer of the best specimens with size, substance and soundness, this herd has no superior.

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Veterinary Instruments
Abdominal Belts,
Invalid Chairs, Crutches,
Sick Room Supplies,

Write today for measurement blank

The J. Durbin Surg. Supply Co.
1508 Curtis St., Denver, Colo.

Mountain States Crop Prospects

Continued From Page 5

Summer rainfall below normal.—San Miguel National Bank.

Tucumcari, Quay county: Prospects are for a 75 per cent crop of non-irrigated beans. Small acreage of corn will make about fourth of a crop. Winter wheat, about 8 bushels per acre. First rain since May 5th came August 12th.—American National Bank.

Note: Rains in northeast New Mexico came in time to make fall forage crops certain.

Roy, Mora county: Prospects for non-irrigated beans are for a big crop. Corn in A-1 condition. Winter wheat made about 10 bushels per acre. Pasture conditions excellent. Summer rainfall below normal.—Roy Trust & Savings Bank.

Deming, Luna county: Our principal crops are beans, maize and alfalfa, all irrigated by means of pumps. The outlook is very satisfactory and prospects good for a nice price. Our rainfall has been below normal, but cattle are going well and pasture conditions with the exception of a few places are satisfactory.—Deming National Bank.

Santa Rosa, Guadaloupe county: Alfalfa about three-fourths of a crop. Beans, non-irrigated, about 40 per cent normal. Fruit about 60 per cent. Pasture very short. No rainfall until August 15.—First National Bank.

Carrizozo, Lincoln county: Alfalfa yield will be good, area restricted, number of tons to acre about average. Beans, non-irrigated, fair yield, about 750 pounds to the acre. Corn acreage limited. Oats good. Barley, some raised, principally for forage. Fruit crop short this year. Pasture conditions fair, below average. Summer rainfall below normal—First National Bank.

Roswell, Chaves county: Alfalfa short crop. Beans, irrigated, increased acreage, prospects good. Beans, non-irrigated, short crop. Corn good, increased acreage. Oats good. Potatoes good. Apples, a third of a crop. Pasture conditions fair. Summer rainfall below normal.

Raton, Colfax county: Alfalfa doing well, average will be 2½ tons for three cuttings. Acreage in Colfax county is approximately 7,000. Beans, irrigated, very good, will average 800 to 1,000 pounds per acre. Beans, non-irrigated, fair, will average 300 to 800 pounds per acre. Corn not very good, will make fodder. Spring wheat fair, will average 20 bushels. Oats not very good. Large acreage will be cut for hay. Barley fair. Irrigated winter wheat 20 bushels. Non-irrigated winter wheat 10 bushels. Potatoes good. Acreage here has increased 500 per cent. Fruit very good. Pasture conditions have not been good, but recent rains are improving them. Summer rainfall below normal.—V. L. Martineau, County Agriculturist.

Carlsbad, Eddy county: Alfalfa will be cut four or five times and average a ton per acre per cutting and selling $24 per ton at shipping station. Beans looking good on irrigated land. Corn looking good. Oats made a poor yield, going only 25 to 30 bushels; barley 15 to 45 bushels, as season was unfavorable for these crops. Short yield of winter wheat on irrigated land. Apple crop about 90 per cent; estimated we will ship 150 carloads from this county. Pasture conditions poor. Cattle and sheep not in very good shape. Summer rainfall short.—J. W. Knorr, County Agriculturist.

Clayton, Union county: Our rains have come in spots. Some sections will have unusually fine crops of broom corn, beans, corn and spring wheat. Summer pasture has been light. Prospects excellent for fall and winter pasture.—First National Bank.

Artesia, Eddy county: Alfalfa five cuttings, a ton per acre per cutting. Corn making 80 bushels per acre. Spring wheat 40 bushels, oats 75 bushels, barley 35 bushels. Estimated yield winter wheat, irrigated, 35 bushels; non-irrigated, 20 bushels per acre. Apple crop heavy. Pasture conditions good. Summer rainfall normal.—First State Bank.

WYOMING

Buffalo, Johnson county: Alfalfa, first cutting very good, second coming on well. Small acreage of corn doing right well. Spring wheat a little bit late but filling in good shape. Same on oats. Some barley harvested and all of crop is good. Large acreage of spuds and big yield expected. Pasture conditions poor. Too much rain in spring and none in summer. Mountain range suffered.—A. F. Scott, County Agriculturist.

Basin, Bighorn county: Alfalfa, about 75 per cent of usual crop will be cut averaging around 2½ tons. Irrigated beans partly doing well, balance may not make crop. Corn doing fair; part will mature, possibly all. Sugar beets good, with big tonnage in prospect. Spring wheat promises about normal yield averaging around 30 bushels. Acreage larger than usual. Oats good, acreage above normal. Estimated yield irrigated winter wheat, 30 bushels. Potatoes will go about 250 bushels. Grass drying early; sage will be good. Summer rainfall about normal.—A. H. Tedmon, County Agriculturist.

Cheyonne, Laramie county: Alfalfa good; most farmers will get two cuttings this year. About 500 acres in dry land beans which promise good yield. First ever grown here. Corn as good prospects as we have ever had. Spring wheat yield estimated 10 bushels. Oats poor, going about 12 bushels. Fifty per cent of non-irrigated winter wheat winter-killed, balance yielding about 8 bushels. Potato acreage double the usual, with prospects good. Pasture conditions best in years. Summer rainfall about normal and some hail.—R. E. Reynolds, County Agriculturist.

Douglas, Converse county: Alfalfa, good yield. Small acreage barley and oats. Pasture conditions good. Summer very dry. Very little rain since June 15th.—First National Bank.

Laramie, Albany county: Alfalfa fully up to normal; two cuttings, 3½ tons per acre. Spring wheat doing well, small acreage. Oats looking fine. Potatoes double the usual acreage, doing well. Pasture A-1, hay crop very good. Summer rainfall about normal.—Albany County National Bank.

Kemmerer, Lincoln county: Fair crops oats and barley promised. Potatoes will make fair crop. Pasture conditions excellent. Summer unusually dry.—First National Bank.

Worland, Washakie county: Alfalfa good, 4 tons per acre. Irrigated beans, good condition. Sugar beets promise about 14 ton yield. Spring wheat good, going about 30 bushels and oats about 35 bushels. Potatoes not extra good. Summer rainfall below normal.—Stockgrowers State Bank.

Rock Springs, Sweetwater county: The wild hay crop is being taken at the present time. The weather is favorable and from reports we believe ranchers are going to have a splendid crop. The limited amount of alfalfa which is grown promises fairly well. Small grains, potatoes, and hardy vegetables promise well, but of course are not as yet ready to harvest. Feed conditions on the range are good, altho the weather has been very dry during the last few weeks.—First National Bank.

Cheyenne, Laramie county: Alfalfa fair. Non-irrigated beans good, corn good for this section. Small grains in fair condition. Non-irrigated wheat averaging about 10 bushels per acre. Pasture conditions good. Summer rainfall has been about normal. One of our officers has just returned from Star Valley and found crop conditions normal. Eastern Idaho will get 10 to 15 bushels of wheat per acre. The beet crop there is below normal. Potatoes better than normal. Wyoming will have a large potato crop.—Wyoming Trust & Savings Bank.

Evanston, Uinta county: Alfalfa full crop, 1½ tons per acre. The same may be said of timothy and alsike, which will go 1¾ tons per acre and wild hay about ⅞ of a ton per acre. All spring grains promise 100 per cent crop. Irrigated winter wheat will go about 35 bushels. Potatoes fair to good. Pasture conditions fair. Summer rainfall about normal, but rains came a little late.—H. J. Thomas, County Agriculturist.

Afton, Lincoln county: Alfalfa heavy crop, about 115 per cent. Oats and peas in good condition with promise of yield above recent years. Spring wheat, straw short, heads small but well filled, 100 per cent crop. Oats 110 per cent, straw short. Barley 100 per cent crop. Winter wheat average about 20 bushels, but much of it winter killed. Same on non-irrigated will average 15 to 18 bushels. Potatoes good with three times the usual acreage. Small fruits good; heavy yield of currants. Pasture on the range good. Summer rainfall has been below normal. — Earle G. Reed, County Agriculturist.

Greybull, Bighorn county: Alfalfa average yield, going 1½ tons per acre per cutting. Irrigated beans fairly good. Spring wheat 20 to 25 bushels per acre. Oats about 40 to 45 bushels. Potatoes fairly good. Pasture little dry and short. Summer rainfall below normal.—First National Bank.

Buffalo, Johnson county: Alfalfa fair crop, good deal winter killed. Spring wheat good acreage and full yield, same of oats. Winter wheat 40 to 50 bushels. Non-irrigated winter wheat 12 to 15 bushels. Potatoes big crop. Pasture conditions dry. Rainfall below normal.—Stockgrowers Bank.

Lander, Fremont county: Alfalfa, first crop went into stack in good condition. Fair yield. Beans, irrigated, in good condition. Sugar beets, backward spring, late planting; 50 per cent in good condition. Some fields without proper care will produce little. Spring wheat in good average condition. Same is true of oats and barley. Winter wheat 30 bushels. Potatoes fair yield. Pasture, reports indicate that the range is dry but the plentiful spring moisture made the grass which will provide for winter feed. Rainfall very light since June.—First National Bank.

Torrington, Goshen county: Alfalfa fair. Beans, irrigated, good; beans, non-irrigated, extra good. Corn good. Sugar beets good. Spring wheat extra good. Oats and barley good. Potatoes 125 sacks. Pasture conditions good. Rainfall about normal.—Torrington State Bank.

Campbell county: Alfalfa poor. Beans, non-irrigated, badly damaged; hail, drought, late spring. Corn very poor. Spring wheat real good except where hail got it. Oats generally very poor. Barley very little but real good quality. Non-irrigated winter wheat 8 bushels. Potatoes 30 bushels. Pasture conditions 100 per cent good. Summer rainfall below normal. — P. T. Meyers, County Agriculturist.

Torrington, Goshen county: Alfalfa, best in years; second cutting now being put up. Beans, 3,000 acres non-irrigated, excellent, but some may not mature. Limited acreage irrigated, good conditions. About 2,000 acres of corn now in roasting ear stage and looking fine. Sugar beets never a better stand; 2,000 acres, look like a 15-ton yield. Spring wheat oats and barley all good. Winter wheat, irrigated, averaging about 35 bushels; non-irrigated 10 bushels. Potatoes look like a 200-bushel crop on about 4,000 acres. Pasture conditions never better.—J. A. Helmreich, County Agriculturist.

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on an offer so easy, so liberal, so wonderful, you can hardly believe it. The very latest 1918 style, a perfect fit, magnificent new design, *delivered prepaid.* ***Send no money now, not one cent,*** just write us a letter or postal and say, ***"Send me your new amazing $3 suit offer"*** and get the latest big set of cloth samples to pick from, a great book of all the brand new 1918 fashions shown in gorgeous colors ***all FREE,*** an offer so splendid, so marvelous, it's hard to believe; greater and better than any tailoring offer you ever saw. ***How to get all your own clothes free,*** how to make all your spending money in your extra spare time, how to become more important, influential and prosperous. Don't wait, don't put it off, write us your name and address now, today, this very minute. Address

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2, 3, 4, 6, 8, 12, 16 and 22 H-P.—Direct from the Largest Exclusive Engine Factory in the world, selling by mail. Nothing but engines. Quick Service—Big Saving—90 Day Trial, 5-Year Guarantee. Fuel cost one-half less using kerosene. Write for new book (copyrighted) **"How To Judge Engines"**, printed in colors and fully illustrated, showing how I can save you $15 to $200—sell you on practically your own terms—Cash, Payments or No Money Down.—Ed. H. Witte.

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DUROC JERSEY HOGS
Everything Registered
Stock for Sale
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FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WANTED—TO HEAR FROM OWNER OF GOOD farm for sale. Cash price, description. D. F. Bush, Minneapolis, Minn.

166 ACRES HIGH, DRY RIVER BOTTOM land; covered in switch cane; cattle need no feed during winter; feed on the cane; one of the best stock farms anywhere. Price, $20 per acre. Henry Clay, Winthrop, Ark.

FOR SALE OR LONG-TIME LEASE—1,600-acre ranch; plenty of grass, hay and water; place to feed this winter; 9 miles south of Bassett, Neb. Will deal right. R. G. Putnam, Owner, Long Pine, Neb.

JUST RETURNED FROM SOUTH AMERICA—Aranged for million acre grant; organizing cattle company. Want members join organization who are given 2,000 acres and stock in company for less than 5 cents an acre. Want 60 to 70 members to go to work on ranch. Highest reference. J. B. Shoenfelt, Woodstock, N. Y.

240 A. GOOD LEVEL WHEAT LAND IN Weld Co., 8 miles from Briggsdale, all fenced, good well, young orchard, 85 A. broke, 60 A. cropped this year; $15 acre on easy terms. Two good half sections adjoining, improved, 2 miles from Osgood, $15 A., one-half cash. A few mountain places. Get my list and map. Mackley, 1643 Champa, Denver.

DOWN THE PLATTE RIVER, 160 ACRES choice land with full paid up old free water rights, $75 per acre. Near Littleton, 35 acres in alfalfa and wheat, full water right, nearly new and substantial buildings, flowing artesian well, improvements cost $10,000. Land, crops, buildings, all for $10,000. Sydney C. Osmer & Co., 308 15th St., Denver, Colo.

480 ACRES, 16 MILES FROM DENVER, fenced, all in wheat, $20.00 an acre, $2,000 in cash, balance at $500 a year; 320 acres, small house, stables, good windmill, fine well, fenced, 120 acres cultivated, including cattle, horses, machinery and implements, $8,000, one-fourth cash, two and one-half miles from good town. Wolf-Rankin Realty Co., 324 17th St., Denver, Colo.

2,560 ACRES—FARM AND STOCK RANCH, right close to Denver, on state highway; new house, barn and outbuildings; all fenced; creek crosses one corner; 2 wells; land all well grassed; 1 section runs 150 head of cattle, fat beef on this pasture now; 400 acres in cultivation; worth $50 per acre; owner says sell at $25; will give 10 years' time at 5 per cent on large part; let me show you this soon; it is at Denver's door. O. W. Lovan, 504 Colorado Bldg., Denver, Colo.

COLORADO LAND EXCURSION—50,000 ACRES to be sold by Trustee, in any size tract to suit purchaser. Crop Payments. One-tenth cash, balance ten yearly payments, but only two-fifths crop and taxes required first four years; fertile soil; irrigated by splendid irrigation system; good roads, schools, markets; delightful climate; within few miles of Denver. Come see the great crops of wheat, alfalfa, sugar beets, vegetables and fruits now growing on these lands; come see the dairy and hog ranches and poultry yards. We also offer as trustee several thousand acres splendid non-irrigated land near Denver on easy terms. Low excursion rates. Railway fare refunded to buyer. Send for literature. Chicago Title & Trust Co., Trustee, 707 Ideal Bldg., Denver, Colo.

WANTED—EXPERIENCED AND SUCCESSFUL man and wife to take charge as operating partners in a fine dry ranch in the so-called rainbelt of Eastern Colorado; 2,000 acres owned, 1,000 acres leased and more available to lease; 350 acres broken, 80 acres bottom suitable for alfalfa, some already started. Over one mile of living water, 140 head cattle (part belonging to widow of late partner). Place well suited for dairy and beef raising; 30 head milch cows; best buildings in Lincoln county, all new and up-to-date; partial set of implements, including tractor; prefer partner who can furnish all work stock, all labor and balance of implements necessary; but will be glad to hear from others; will make liberal terms to first-class, progressive, up-to-date man. R. D. George, Boulder, Colo.

I HAVE SOME CASH BUYERS FOR SALABLE farms. Will deal with owners only. Give full description, location and cash price. James P White, New Franklin, Mo.

GOVERNMENT LANDS

GOVERNMENT LAND. FREE BOOKLET. JOseph Clark, Sacramento, Cal.

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REGISTERED HEREFORD BULLS FOR SALE; one bull, Bonnie Lad 20th 355369, twenty months old. Good individual. Three yearling bulls. Write for full particulars and prices. Fontaine & Weedin Ranch, Galatea, Colo.

REGISTERED JERSEYS AND MILKING SHORThorns. Jersey herd headed by Maggie's Shy Duke, 140084, Grand Champion Denver Stock Show. Two nearest dams average 54 lbs. milk per day. Shorthorns headed by Independence Lee 427351. Two grandams average 9028 lbs. milk in one year. The Hinman Silo Co., 1650 Champa st., Denver.

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QUALITY DARK CORNISH—UTILITY AND exhibition stock for sale. R. H. Jandebeur, Alma, Neb.

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LUMBER, MILLWORK, POSTS, DIRECT FROM mill, wholesale prices; send for carpenter's list for quick, freight prepaid estimate; millwork catalogs free. Keystone Lumber Co., Tacoma, Wash.

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—a confidence bred by years of thorough acquaintance with Fisk quality and dependability.

In the purchase of such products bear in mind that dependable quality is absolutely essential. A patch that won't stick is worthless—a cement that doesn't hold is worse than none at all. To spend money for sundries just because they are cheap is like buying shoes with paper soles.

Every Fisk Sundry made is backed by the Fisk trademark of highest quality and economy, and the pride of the manufacturer in maintaining this high standard of value.

When you buy Fisk Sundries you pay a trifle more in *some* cases—but *you get what you pay for and you can bank upon the quality of what you buy.* That is the essence of true economy and sensible buying.

This New Cementless Patch Is an Evidence of Fisk Initiative in the Sundry Field

—an aggressiveness that has been characteristic of the Fisk Company nearly twenty years. The Fisk Molded Patch is diamond shaped. It will cover a larger cut, but, because all waste rubber is eliminated, costs less. It has strength where strength is needed—built up heavy in the center. Can be applied easily and when you put it on your tube you know it will stick. Unquestionably the most efficient and best value cementless patch on the market.

6 for 25c—A New Patch—A New Package—A New Price—6 for 25c

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Western Farm Life

Vol. XIX | Denver, Colorado, September 15, 1917 | Semi-Monthly

YEARLINGS ON THE CAVE RANCH

See Article Page 3

Brock Hoffner Press Co.

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One Man One Team

Improved Powers Combined Well Boring and Drilling Machine

Same rig bores through any soil at rate of 100 ft. in 10 hours, and drills through rock. One team hauls and operates machine. Engine power if wanted. Easy to operate—no experts needed.

Small investment; easy terms. Make machine pay for itself in a few weeks work.

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Separators—Engines—Spreaders—Tractors

Don't buy any implement until you see what Galloway can save for you. Learn all about my low prices and fine quality. I sell you direct from my factories at the lowest manufacturer's price, and if I cannot save you big money on the best implements built I don't want your order.

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A Farmer on Price Fixing

I noticed a copy in your paper of the telegrams regarding the fixing of prices on foodstuffs. I hardly know just how to explain what I think about it, but will tell it in the best manner I know how. For instance, the bulk of the wheat last fall was hauled off and sold for from $2 to $2.25 per hundred and now the same wheat is being sold back to us in flour at $7.05. How about the speculation? I think the government had better get a hustle on and stop the big speculation. What do you think about potatoes? They sold at from $2 to $2.50, now they are bringing twice and as high as four times this price. The beans were sold at from 3½ cents to 4 cents a pound, now we have to give 12½ cents and 15 cents for them. Now for these same potatoes, beans and wheat that we sold at these prices we are buying at these high prices. I think the government ought to stop the speculation. If it has power to stop the farmer from getting a big price for his stuff why not stop the grafters? I am not like some of the farmers that want everything we raise to bring enormous prices and say we can stand to give high prices for our bread and such things. If we get $3 or $4 per hundred for wheat I stop to think of my fellow man in the city, with a big family, that isn't getting any more wages than he did when foodstuffs were selling for one-third and one-half what it is now. I would like a letter in answer to this from some real intelligent man who can explain this thing of the government action of stopping the farmers from getting paid for their products, and also explain to me why the government isn't stopping the big money men that wear fine clothes and diamonds and ride in their fine automobiles instead of figuring against the farmer.—THOS. YOUNG, Broomfield, Colo.

Saving the Hog Manure

Hog manure is usually left where it is dropped, and in many cases this method of disposal is economical, but in others it may be very wasteful. Where hogs are fed concentrates the manure is one of the richest produced on the farm. F. L. Duley of the University of Missouri College of Agriculture mentions three principal ways by which the manure from hogs may be returned to the land: (1) pasturing crops, (2) establishing temporary feed yards, (3) hauling the manure to the field.

When possible the first method is usually most practical and requires least expense. Where crops of any sort are pastured by hogs the manure is returned directly to the land. This is one strong reason for hogging down corn, for it not only saves the labor of harvesting the crop, but requires no hauling of the manure back to the field and entails no waste of fertility in transfer.

On many farms it has been found good practice to establish temporary feeding places in the pasture or field so that the manure will be deposited where most needed. This may sometimes cause a little extra labor in feeding, but it saves both the solid and liquid manure and reduces the amount of filth about the barnyard and minimizes the danger of disease.

When it is necessary to feed hogs in closed lots the manure should be collected and protected from leaching until it can be hauled to the field. There is probably too great a tendency to place the feeding pen on a steep hillside or near ditches where a large part of the manure is carried directly into the streams by heavy rains or lost thru leaching. This may be an easy way to clean the pens occasionally, but it is extremely wasteful of fertility. As a rule, when hogs are lot-fed practically all the manure is lost. There was never a time when manure was worth so much as it is today, and every effort should be made to save it.

Advice is like snow; the softer it falls, the longer it dwells upon and the deeper it sinks into the mind.—Coleridge.

The hillsides of Sac and Ida counties in Idaho are said to be the world's popcorn center. The section covers about 5,345 acres, on which are produced 197,322 bushels of popcorn. The growing season covers about 130 days.

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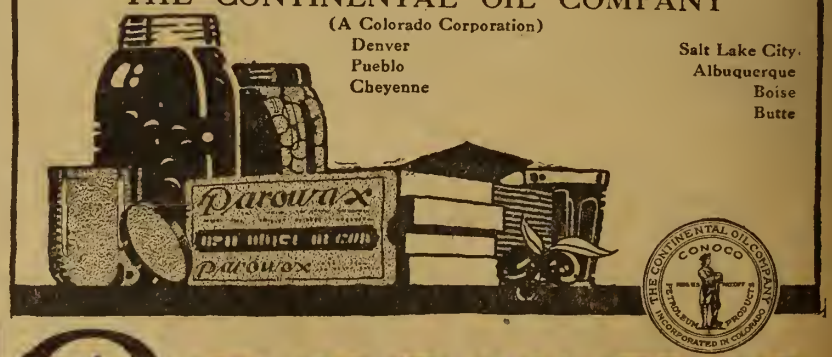

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A Western Magazine for Western Farmers and Stockmen

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Largest Circulation of Any Farm Magazine in the West

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Visit to Home of Renown, a Noted Hereford Sire

NEW HERD OF PURE-BREDS SELECTED BY AN OLD-TIME BREEDER

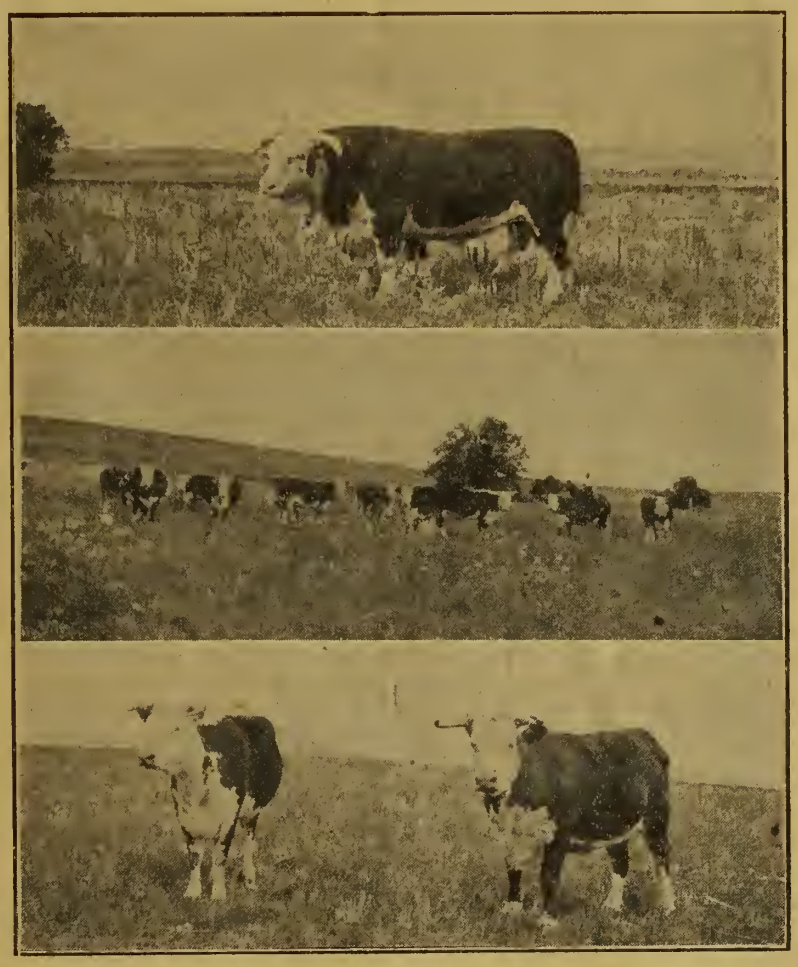
OUT on Call creek, about thirty miles southeast of Denver, there's a new herd of purebred Herefords browsing on the luscious grass of the old Everett ranch, which is now in the hands of H. Bert Cave, a veteran breeder, who was for some years strongly in the feeding game, but has now gone back to his old line with a foundation of remarkably good blood. Heading the herd is Renown (545,499), an imported bull purchased from the Col. E. H. Taylor herd at Frankfort, Ky., for $2,500 at the Blue Ribbon sale in Kansas City last June. Others of note are Gay Perfection (626,580), by Gay Lad 16th, who recently topped the record in the Harris & Sons' sale for $20,000, and Prince Rupert 35th (342,059), by Prince Rupert 8th; Crusader Dale, from the Wadsworth herd at Monroe City, Mo.; Roehampton 25th, by Roehampton; Harold, by Weston Stamp (dam Beau Mischief).

Among the cows are such outstanding individuals as Maydale (344,670), one of Perfection Fairfax's best, and Miss Perfection (451,576), by Prince Perfection, a half brother of Perfection Fairfax.

There are fifteen registered cows from the best strains offered at the Blue Ribbon sale, in calf by such sires as the grand champion, Vernet King IV, Don Perfect and Roland Fairfax, and 110 other purebred females, with nearly a hundred calves, about half of them bulls, besides a hundred purebred yearling heifers that will be bred to the registered bulls this fall for July calves.

There will be a big offering of the calves at the Hereford sale during the National Western Stock Show next January from this herd, as well as an exhibition in the show ring.

Mr. Cave is in the habit of breeding his heifers a little young, but he gives them special care and feed, making better mothers of them and surer to breed. The cows he has purchased are the heaviest milkers of the whiteface breed that he has ever handled. He selected them because they produce growthy calves. This is the line he has always successfully followed in breeding.



At top: Renown, Chief Sire of the Cave Herd; snapshot taken in pasture. Middle: Registered cows in the pasture. At bottom: Miss Perfection and Maydale, two of the registered breeding cows. This herd is a new addition to the notable Herefords of the Intermountain region.

The ranch comprises 5,100 acres of well-grassed hills and valleys, watered by good streams. It lies on the outskirts of the foothills, with just enough small timber to furnish some shade in the pastures. Last winter 500 head were carried on the place. About 275 were sold off this spring on account of the high price of feed, and there will be more culling to get down to not more than 300 head of purebreds, which will be easily carried on the ranch.

A hundred acres of alfalfa in the creek bottoms needs no irrigation, as the roots reach the underflow. This furnishes three cuttings of hay. Then there is a considerable acreage of corn, and oats, rye and winter wheat, for grain and straw. Also a field of fifty acres of pinto beans as a cash crop and a small acreage of potatoes. There will be no need for buying feed, as the ranch is a good forage producer and crops looked fine when the writer visited the place late in August. The crops are grown by the dry farming system, which is a rather new experience for Mr. Cave, tho he says he doesn't see that it differs from good methods on irrigated land, where he followed the practice of deep plowing and clean cultivation. He depended on farming and not on the water to make crops, and the system is the same on dry lands.

The ranch is divided into six pastures, a portion being reserved for winter range. Considerable native hay is cut in the creek bottom above the alfalfa fields, and this ground then furnishes fine fall pasture.

The owner rides all the pastures about three times a week to watch the cattle and the grass, and the registered cows are under his eye daily. It is this personal care that brings success to any experienced breeder. It is reflected in Mr. Cave's calf crop record—90 per cent for six years past—and he expects to push that up to 95 per cent and keep it there. He has been handling and breeding Herefords eight or ten years, but before that bred black cattle. He prefers the whitefaces because they sell better, are easier to handle under our range conditions, require less feed and care in severe weather and are better rustlers, and because they bring the money.

"When Hereford bulls are selling from $5,000 to $27,500, it strikes me that's where the money is." That is the way he sizes up the matter from the business standpoint; but, on the other side, there is the liking he has for blueblood. There is hardly an animal on the ranch that, in his own class, can be accused of mixed blood. That holds true of the chickens, the Persian house cat (which is little Dorothy Cave's pet), the Collie dog, the work mules of Hamiltonian strain and on up to Renown, the crowned head of the Hereford herd.—A. T. S.

Increase the Meat Supply

The Department of Agriculture and the Food Administration desire to bring to the attention of stock men and farmers the following general position as to the American and the world situation in food animals and the provisions which are broadly necessary from a national point of view.

One of the incidents of the European war has been the slaughter of a large number of animals, and it is estimated that already the herds of Europe have been diminished by 28,000,000 cattle, 54,000,000 sheep and 32,000,000 hogs. An accelerated increase in this diminution of meat animals must take place in Europe from month to month as long as the war lasts.

We have two problems in meat supplies: The first is the task of supplying our own soldiers and citizens and helping feed the soldiers and citizens of our allies during the war; and to do this we must furnish larger supplies and must find these supplies for the present largely by reduction in our own consumption and waste.

The second problem is the one which we desire to bring particularly to the attention of the American producer, and that is: After the war, Europe, with diminished animals, and therefore diminished annual production of animal food, will require larger imports of meats during the years of recuperation, and will probably require the actual import of breeding animals. Therefore, in a broad way, the outlook to the American producer from now on and after the war will be (a) a large demand for animal products, (b) a continuing necessity for meat and dairy animals to convert forage and grains not needed for human consumption into meats and dairy products.

The herds and flocks of the country can only be increased over a period of years, and the foundation for such an increase should be laid at once. Such increase is a national interest, and it must be made to the interest of the American producer.

Some sections of our country are stocked to capacity with mother ewes, from which lambs are marketed at from 70 to 80 pounds weight. This is the most economic method of producing mutton, just as "baby beef" is the most economic method of producing beef, and the quality of both those meats is of the best.

What we need is more cows and more ewes producing the 700-pound calf and the 70-pound lamb. We wish to restore the confidence of the farmer in his industry by convincing him that he will get a fair share of a fair price paid by the consumer and extending to him credit on a reasonable basis so he may be able to equip his farm for handling sheep, hogs and cattle successfully. Only by adopting the foregoing methods and principles can production be stimulated and the consumer protected.

It is essential for the future welfare of our nation that the supply of all meat animals be increased. This, not only from the standpoint of directly increasing the food supply of the country, but more livestock on the farm means more fertility in the farm; more fertility means larger grain crops produced at a less cost per bushel; more cheaply produced grain should mean cheaper bread to the consumer as well as more net profit to the farmer. Especially should the energies of the farmer be directed to increasing the sheep stock of the country. Clothing comes next to food as a necessity. Not only does the sheep meet the demand from a food and fertility standpoint, but for its wool for clothing there is no substitute. Every interest that can make itself felt should advocate and encourage the establishing of flocks of sheep in proportion to size of farms in every section of our country. Every farmer should carry to its yearling form every heifer calf of both dairy and beef breeds and every ewe lamb that promises to have an economic future.

Every effort should be made to bring to maturity every heifer calf or ewe lamb whose breeding will give some assurance that it will convert its feed into either profitable meat or profitable dairy products.—Herbert C. Hoover, United States Food Administrator.

Selective Plant Breeding for Drouth Resistance

WHAT THE FARMER AND THE SCIENTIFIC EXPERIMENTER CAN DO

E. R. PARSONS

THE two principal factors in successful dry farming are the using of good methods and the planting of crops that will grow. The first is easy, for the facts about the accumulation and conservation of moisture have been pretty well threshed out and are anybody's for the asking; but the second is not so easy, for many have to purchase seed at times, without knowing what they are buying, and much is sold for drouth-resisting purposes which has never seen a dry farm.

Our up-to-date farmer raises and selects with the greatest care much of his own seed, and what he does not raise he secures ahead of time from some reliable source which satisfies his requirements. Besides obtaining, if possible, the best strain, it is always advisable to purchase seed from crops raised under dry conditions, for whether for that reason it is more drouth-resisting or not, the fact remains that what has once grown and matured on a dry farm will do so again; but it must not be supposed that raising a type for two or three years without irrigation will make it drouth-resisting. Every little helps and every season has its effect, however slight; but without selective effort it might require fifty or a hundred years or more to create a noticeable change in the desired direction.

The Agricultural Department has done much for the farmers in introducing new varieties and searching the world over for drouth-resisting plants; but outside of a few experiment stations they have no plant-breeding establishments where the improvement of imported types and the development of our native drouth-resistant plants and trees might be carried on to the limit.

Two Lines of Endeavor

In propagating with this end in view there are two principal lines of endeavor, the creation of new varieties by crossing and the adaptation of known types by selection only.

In the semi-arid districts are many native plants and trees which grow wild under dry conditions without any culture whatever. These are most valuable as bases to work upon with a view to improvement by crossing. It is often remarked that in requiring immunity from drouth a wild variety usually loses in productiveness. In breeding for the improvement of such a type it would naturally have to be crossed with a heavier yielder, following which those plants would be selected from a numerous progeny raised for the purpose which evinced a disposition to produce profitably under cultivation, while retaining their drouth-resisting traits.

Among our wild grasses, some of which might be capable of improvement for feed purposes, are the bluestems, the lyme grasses or rye, the tall stipas or feather grasses, canary grass, wild millet and others.

It is a significant fact that nearly every grass ever heard of has in some manner become adapted in the wild state to semi-arid conditions. We have varieties of timothy, red top, rice grass, wheat grass, oat grass, barley grass, the fescues and many others which, owing to their short growth, a consequence of adaptation to adverse conditions, would appear to be of more value in the pasture than the meadow.

Flax Grows Wild

In the leguminous group there are an endless number of clovers, vetches, tares and wild peas, all of which make, however, only a medium growth on the prairie in average seasons. A remarkable plant is the perennial flax, which grows wild on the hills and plains adjoining the Rocky Mountains. It comes up from the root every year like alfalfa, and is often found three feet high and full of seed, but unfortunately, this is a little too small for commercial use. Here we have a plant perfectly drouth-resisting which matures its seed every year on the virgin prairie in spite of adverse conditions, which possesses a practically permanent root structure and is perfectly at home in the dry-farming country, which is its natural habitat, and all it needs to make it a most valuable acquisition is a larger seed pod.

This could doubtless be accomplished in the usual manner by breeding to a larger seeded variety and then selecting for size combined with the wonderful qualities already possessed by this plant. The above is an example of our first line of endeavor—the creation of improved or new varieties by crossing.

Experiment by a Farmer

Our second line, that of adaptation by selection only, from a standard type, might be illustrated by the experience of a certain dry farmer well known to the writer, who was much obsessed with the idea of raising winter wheat. Everyone said in those days that this could not be done without a snow covering—something that it was impossible to guarantee all the time in a Colorado winter. Nevertheless, he procured some winter wheat from Kansas and planted several acres. Sure enough, it all died out but a hill here and there; but this is not by any means the end of the story, for our man had the intuitions of a born plant breeder and instead of plowing the land up and putting in corn, he took a long breath and waited.

These stools few and far between grew wonderfully, sending out from 60 to 100 stems apiece, and at harvest time yielded nearly a bushel per acre.

Now the question arose in his mind, would all this seed, if planted, produce plants which would not winter-kill? He determined to try it. Fifty per cent survived, which was a big gain on the original planting. The other 50 per cent reverted to the old type (as plants will do), which needed a snow covering. The next year 75 per cent came thru the winter, and after that the seed was practically good for a full stand. This is a very simple case of survival of the fittest in which a few years sufficed to establish by natural selection a type of wheat that could be raised without a snow covering.

NEED OF A DRY FARMING COLLEGE

We should have not only a dry farming college, where all these subjects could be properly threshed out, but also a plant breeding establishment for the propagation of drouth-resistant varieties. Something might be done in this direction if our statesmen and business men could be brot to realize that in Colorado alone there are about 20,000,000 acres which can be dry farmed, and the income from this, at $10 an acre, would bring in two hundred million a year. We take great pride in landing a factory once in a while for Denver, but what does it amount to compared to an industry of this magnitude, which could feed half the United States and support easily two hundred thousand families? This is our last big stake. Why not go after it?—E. R. Parsons.

Whether selective processes are carried out by nature or by man, results are always obtainable.

Many Interesting Varieties

There are enough interesting and beautiful varieties of plants, flowers, fruits, trees and shrubs, natives of our western dry lands, to fill several books in describing them; but in an article of this nature we can only touch on a few of the most promising. In the way of fruit we find currants, plums, strawberries, hazelnuts, grapes, gooseberries, juneberries, raspberries, cherries and others. Some of these need very little improvement to make them equal to the best garden varieties; but unlimited possibilities lie dormant in all of them and their home is in the country of the soapweed and drouth.

Burbank's finest and largest plums spring from crosses with the wild American varieties, mostly from the South, which renders them too tender for mile-high use; but what matter? We have our own natives, we have the tree, all we need is the man.

Some day there will be a dry farm plum as big as a peach and the tree will thrive and live to be half a century old like many of the wild plums. These owe something of their hardiness to the fact that they grow slowly and their wood ripens thoroly. Those who wish to raise peaches east of the mountains should note this and graft them on the native plum so that the slower growth with more complete ripening of the wood will reduce their tendency to winter-kill.

The only representative of the cactus family in much of the dry farming country is the prickly pear, which is good cattle feed when the stickers are burned off. Burbank has bred one which is thornless, but being of southern origin, it is not yet adapted to cold countries. Both the prickly pear and the soapweed are interesting as being relics of the past—stunted survivals of the days when palms grew in the Rocky Mountain States.

Farmers Can Do Much

Much may be done in the improvement of ordinary crops by the farmers themselves, both by care in selection and the breeding and propagating from sports or variants. These might be described as specimens above the ordinary and are found once in a while in any field.

Crossing and hybridizing, besides creating new mixed varieties, also have the effect of stimulating the production of inherited but dormant traits, a tendency which expresses itself in the appearance of sports, especially in the first generation of the new cross, and many novel types have been created by Burbank and others thru taking advantage of these exceptional developments. Altho it is true that plant breeding may be considered a highly specialized industry requiring expert knowledge, it is also a fact that much good work has been done in this line by farmers, gardeners and others who had an eye for form and an intelligent interest in the working of nature's laws.

In the vegetable world the laws of breeding are the same as in the animal world and production depends on fertilization—the commingling of the male and female elements. These elements may exist together in a single blossom which is termed bisexual, or they may be found in different blossoms on the same plant, such as the squash, which is called monoecious. Then again, there are other plants and trees which are dioecious, which means that the male blossoms are all on one tree or plant and the female blossoms on another. The asparagus is a good example of this in plants, and in trees many of the palms are in this class.

Flower and Fruit Blooms

A large majority of the blossoms of our flowers, fruits and grains are bisexual. The cherry is a good example of this. The female organism is the pistil in the center of the blossom, the round top of which is like the head of a pin and is called the stigma. All around the stigma are the stamens, which also have heads or anthers which produce the pollen. A day or two after the opening of the flower this pollen begins to appear and falls off the anthers onto the stigma; when this happens some vivifying germ passes down the pistil into the cherry at the base of the blossom and it commences to grow.

The pistil is the most delicate part of the flower and is often destroyed by frost even in the bud. In this case the tree may blossom freely and yet have no fruit, and the pistil and tiny cherry at the end of it will be found to be dried up and black. These blind blossoms are often found after late frosts in the spring of the year.

Altho the male element or pollen is present in all bisexual blossoms, yet strange pollen from some other tree has a stronger fertilizing potency than the home pollen. This would seem to be a natural provision against inbreeding, for when bees and insects are working in an orchard nearly every blossom becomes fertilized with pollen from some other tree, and the fruit is finer and hangs better than when self-fertilized; but if the weather is unfavorable for insect flight and the flowers have to depend for fructification on their own pollen, much of the fruit will be small and stunted, turn yellow and drop.

In the artificial pollenization of bisexual blossoms it is not considered necessary to remove their own pollen, for the reason that the pollen the breeder is about to introduce is the stronger, and will undoubtedly accomplish fertilization if applied at the right time; but the flowers are often encased in mosquitobar or cheesecloth to prevent the intrusion of insects. In some plants, however, the blossoms before crossing have to be emasculated to prevent inbreeding. This is necessary only when the florets are entirely encased in a capsule or envelope which holds the male and female or-

(Turn to page 14)

On the dry land farm of William F. Drury, near New Raymer, Colo. At the right, several rows of potatoes, thriving on stored moisture and careful tillage. At left, a windbreak of cottonwood trees, those in the foreground set out this season; the taller ones in rear three years old.

Closing of Eleven Little School Houses

ONE BIG RURAL HIGH SCHOOL TAKES THEIR PLACE

Old School Used as Teacher's Residence

IN all the United States there could probably be found no counterpart for the New Raymer Rural High School, located in eastern Weld county, Colorado, about 60 miles from Greeley, the county seat. To make this modern school possible it was necessary to abandon eleven one-room rural schools and transport the pupils to the central school from a district 18 miles in length and nine miles wide, some being hauled 15 miles twice a day. The school is located in an unincorporated town the entire population of which could easily be accommodated in its auditorium. The town contributes only a small portion of the enrollment, a large majority of the pupils coming from the dry land farms of more than four congressional townships.

In its sightly location on a ridge overlooking the town of New Raymer, the school is visible for many miles from the surrounding prairie. It was built at a cost of nearly $30,000 and is just now being finished, altho already in use for school purposes.

Three farmers with vision are the governing body of the big district. These men conceived and carried out the idea which will give 225 boys and girls in a thinly settled district equal educational advantages with the children of the cities. The board is composed of E. C. Worsfold, president; C. R. Graves, secretary, and William B. Dunlap, treasurer. Secretary Graves is a member of the state legislature and well known beyond the confines of Weld county for his active interest in matters of agricultural legislation. Paul J. Hewett, superintendent, is a man of excellent educational qualifications, who has a grasp of rural problems and is an active farmer as well as an educator. New members of the faculty just appointed are A. E. Du Puy, principal of the high school, who will also have the teaching of manual training and be the school's athletic director, and Miss Myrtle Danielson, music, home economics and girls' athletics. These instructors both had agricultural college training at Ft. Collins and they were selected especially because of their fitness to teach vocational subjects.

The entire school board and the superintendent journeyed to Fort Collins by auto, a distance of nearly a hundred miles, to select the new instructors. Nothing was left to chance or to the recommendations of friends. The school district sought the teachers and selected the ones that were qualified by education and experience for the task of vitalizing rural studies.

Beside the magnificent new school building stands the little frame structure that served as the New Raymer town school. It is now being used as a residence by one of the teachers. The other ten abandoned buildings are to be sold at auction, there being a demand for them as residences by homesteaders. They are nearly all in good condition, and not very old, because the territory has not been settled many years.

As a matter of fact there was a previous settlement of the district which, because of opposition from cattle men and lack of knowledge on the part of the settlers of the conditions they had to meet, was not permanent. The town of Raymer, predecessor of New Raymer, once was a prosperous village, every vestige of which disappeared from the prairie before New Raymer was founded some seven or eight years ago. There is today not one inhabitant of the new town who knows anything about the original Raymer except by hearsay.. The only relics of the original town are the remains of two or three foundations of buildings that were moved away when the town died.

The New Raymer Rural High School

The new settlement is permanent. Substantial brick buildings house the mercantile establishments. Grain and bean elevators have been put up to take care of farm products. And towering above everything else is the educational institution that testifies to the faith of the farmers in the future and to their foresight in making proper provision for their children.

The writer, in company with Prof. C. G. Sargent, head of the Department of Rural Education of the Agricultural college; W. E. Vaplon, state leader of Boys' and Girls' clubs, and M. E. Knapp, county agriculturist of Weld county, visited the New Raymer school recently, the occasion being an entertainment given by the Girls' club for the benefit of the Red Cross. The school auditorium, seating about 300 persons, was used and altho still unfinished it served the purpose well. The young ladies had provided an interesting program of music, recitations and addresses. Refreshments prepared by the cooking club were served.

The visitors were shown thru the school building, which is electrically lighted by its own plant, and has a water and sewage system the equal of anything to be found in the city. Water is supplied by a pumping plant, the engine for which also furnishes power for the electric lighting system. Seven machines are required for transportation of the pupils, two auto trucks owned by the school district bringing some 70 children from the south side of the district, and five privately owned cars, rented by the term, bringing in the balance. The transportation cost is about $60 a month.

The school grounds comprise a city block, but it is planned to enlarge them and take advantage of the offer of the Agricultural college for a scheme of landscape architecture to beautify the surroundings.—A. T. S.

Sweet Clover Builds Soils and Conserves Moisture

SECOND ARTICLE ON THE DRY LAND FARMER'S WONDER PLANT

DR. VERNON T. COOKE

THIS article on white sweet clover (Melliotus Alba) is written especially for the semi-arid regions where the rainfall is often conspicuous by its absence. It is impossible to apply fixed rules relative to what should be done in a country which has so varied climatic conditions as the United States, and especially in dry regions. But using judgment and common sense will enable many to gather valuable ideas and important information from articles which seemingly do not apply to their conditions. Many active agriculturists do not look far enough ahead when they either are (as they should be sometimes) planning, or doing their work. Too many of us are prone to expect immediate results, that is we plan to plow, harrow and seed so many acres and let it go at that; we do not usually look any farther ahead than the immediate season but repeat the operation year after year, overlooking what is of supreme importance, that we may in normal times be making a living yet are not getting an adequate return for labor and capital.

We know that if we have a certain amount of money in a bank it is sure to become exhausted if we keep drawing sums out and spending it, but if we add various sums to our banking account the original sum grows. This in another way is the exact situation of a farmer—the soil is his bank and if he treats it right it will increase in value in two ways. First it will thru good crops pay big interest on the cash value of the land and at the same time the land increases in value thru the large crops it produces, therefore it behooves the farmer to consider well how to permanently improve his land, and at the same time get crops that pay for work expended. The farmer in those dry regions where it was once said crops could not be raised has a most wonderfully fertile soil; fertility which has been accumulating for centuries. Now, this fertility is not always immediately available for growing crops unless certain chemical changes take place in the soil to set it free for the plant to use.

Need Humus in Soil

Crops and cultivation use up our humus, and soil deficient in humus will not hold a maximum amount of moisture. Without moisture we cannot dissolve the latent fertility in the land and, as the organic matter in semi-arid soils is small, we can readily understand that, unless we supply organic matter to the land, we are handicapping ourselves by taking a long chance of getting a crop should the season be dry.

One of the best ways to improve our land, and that, too, in more ways than one, is to rotate our crops with white sweet clover. And before I enlarge upon this really wonderful plant would ask my readers not to condemn it from what they have heard or read, but to give it a fair trial, if only an acre or two. All important and big things in this world were "knocked" at their initiation and some day white sweet clover will be valued at its true worth.

This three-acre field of sweet clover, photographed August 18, is on the farm of J. R. Smathers, near New Raymer, in eastern Weld county, Colorado. Eight or nine head of work horses on this dry land farm got all of their pasture on this patch during the past summer and when this photo was taken the clover was going to seed, with promise of a good crop. Mr. Smathers got 18 bushels of seed per acre three years ago.

Responds to Good Treatment

White sweet clover will grow like rye with poor treatment, but responds to good treatment. Therefore it pays to plow and prepare our land well and put it in as good shape as possible. Soil plowed deep, eight inches or more, properly harrowed and packed (not packed when wet) will raise good crops of clover. It is far more satisfactory to raise good crops and just as easy as raising poor ones. Unhulled seed is preferable to sow in the fall or winter. We must make an allowance for the fact that some of the unhulled seed will not germinate the first season, if at all, due to immatured seed and sometimes extra hard covering which the season may not affect. The amount of seed per acre varies; that is, quality, texture and condition of the land must be considered as well as viability and percentage of germination. Twenty-five to thirty pounds sown broadcast early in the fall is considered good.

Then the question arises, When should we sow in the spring?

We suggest that the land, if not plowed in the fall, which we prefer, be plowed as early in the spring as work permits. If ground is in good condition to do good plowing, and it should be, harrow if possible with

(Turn to page 16)

Farming In Twin Falls Country

A FARMER WRITES ABOUT SOUTHERN IDAHO

JOE S. HARVEY

THE Twin Falls irrigation project in Southern Idaho has a volcanic ash soil; its people have been drawn from all over the United States. Its climate is pleasing, and the variety of crops grown is a wide one. Prosperity is found on the site of a former desert, and the shamrock hue of alfalfa has replaced the dull brown of sage brush.

The transformation was not made in one year, however, for many a tough problem has been solved, and there still are obstacles to overcome. On the whole the prosperity of the farmers is sane and solid. An increase in land values from a mere song ten years ago to $175 and $250 an acre now, with more buyers than sellers, is eloquent enough proof.

Red, white and alsike clover, alfalfa, wheat, oats, barley, onions, potatoes, beans, peas, sugar beets, stock mangels and some corn are the main crops. They are augmented by livestock: sheep, dairy cattle, some hogs and some beef cattle.

When the land was cleared—and practically all of it now is in cultivation—it was seeded to alfalfa or clover in order to introduce humus, and after a few crops of one of these legumes, the soil, naturally rich in mineral elements, became very productive. Banner yields have been grown, the reporting of which to strangers invites to membership in the Ananias club. The proceeds have gone into better livestock, comfortable houses, roomy barns and automobiles.

Rotation is being practiced extensively, and the variety of crops that can be grown makes the problem of maintaining soil fertility comparatively easy. Alfalfa or clover, then potatoes, beets or beans, followed by a year or two of grain, marks the usual program.

Alfalfa produces heavily, and little trouble is met in growing it. During the 1916 season grasshoppers bothered some and under the direction of the county agent, Mr. W. N. Birch, the hoppers were fought by the spraying method.

Damage to the red clover seed crop by the aphis has cut profits. This small green insect propagates very rapidly. Its operations begin at the root of the plant and later are shifted to the blossom. The sticky exudations of the bug are left in the pods, making threshing a very difficult job.

When it was noticed that the aphis family was very much in evidence, the advice to cut for a second crop of hay was freely given. The hope of duplicating big yields of former years caused farmers to hesitate, however, and the great majority cut for seed and while the red seed crop in 1916 was little more than 50 per cent of the 1915 record season, a pleasing surprise was in store for those who had chosen to gamble on seed instead of hay. The clover chaff which was threshed before rain washed out the "honey," made excellent roughage. So the farmer got seed and some feed, too. White clover and alsike seem to be affected less by this pest than the red, tho in some cases the "honey" was evident in them.

The honey, so called, sometimes is so prevalent in the seed after threshing that buyers refuse it. Then the farmer has a job of washing on his hands. The "honey" in crystals comes over the recleaner with the seed and packs so solidly that in some cases the bag must be cut to be emptied. Machines have been perfected to do the washing. So far, government experts have been unable to find any successful method of combating this pest. A good rain after the seed has matured will wash the "honey" away.

One problem that is always food for discussion among irrigation farmers is how many times to water different crops. One can learn this to perfection by listening to men who have won success by following a fixed rule. Some water alsike once just as it starts to bloom, some water twice, and some water as often as they can. Each method has its adherents who point to their yields as proof that they are in the right.

The generally accepted practice, if there is any "sich animal" in watering alfalfa for a seed crop, is to give it one good drink and let it go. In 1915 Mr. J. W. Holihan, a successful farmer living three miles northeast of Filer, plowed a field of alfalfa and put it into wheat. The alfalfa came up again, and he decided to try for a seed crop. He did not cut a hay crop. His neighbors advised him to water once, but "Holly" squinted over that field several times and irrigated it again. Then, as the season advanced, he decided to experiment on a part of the field with a third watering. The crop was noticeably better where the third irrigation had been given, and at threshing time one acre of the best was measured and the yield was 12 bushels. The other portion of the field averaged about half as much.

Then, one can hear discussions and arguments about how to irrigate potatoes. Different practices are followed, of course, two irrigations being the rule on a broad average. Felix Turnipseed used a method of his own. He waited a while before starting irrigating, but once begun he kept a light plow on his field until his crop had been watered five times. His yield was 200 bags, and his gross returns were close to $400 an acre. W. M. Shotwell, living near Twin Falls, averaged 275 bags to the acre.

Wheat proved a profitable crop for Twin Falls farmers because they had a normal yield and prices were high. Harry Coombs sowed wheat on 18 acres of ground which had been in beans the year before. Owing to previous cultivation, his seed bed was in excellent shape, and when the last kernel had run from the grain separator his average was found to be a few pounds less than 76 bushels to the acre. He contracted his crop before threshing at $1.11 a bushel with the buyer furnishing the bags. His gross returns were close to $84 an acre.

Many farmers had wheat that grossed $60 an acre, and $50 was common with an occasional return lower.

Sugar beet growing is an industry that started with a rush in 1916, due to the erection at Twin Falls of a million dollar sugar factory by the Amalgamated company. The crop was produced on a smaller scale during previous years for a factory at Burley, but the acreage in 1916 was much larger than that of any preceding

(Turn to page 16)

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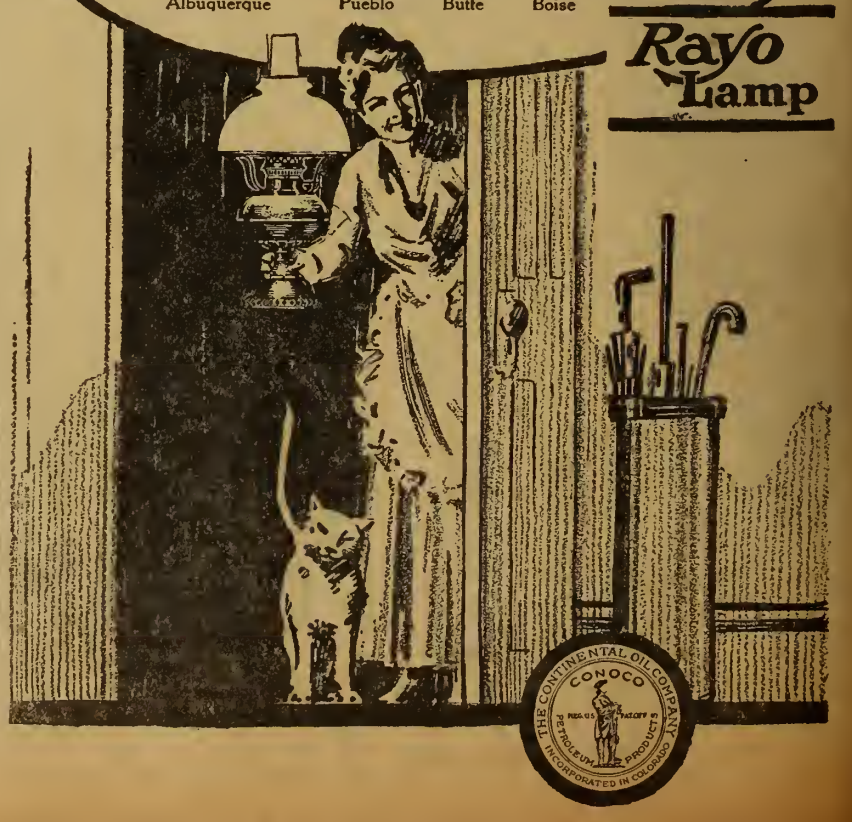

Pinto Beans Recognized

The pinto bean has been officially recognized by the war and navy departments of the government, thus assuring a good market for the big crop which the mountain states expect to harvest in the next few weeks. This means that a fair proportion of all the beans to be purchased for use of the troops at the front, on board ships and in the training camps, will be pintos. The Colorado division of the United States Bureau of Markets is responsible for recognition of this western food product grown over an enormous acreage this season, at the urgent solicitation of the Department of Agriculture. Mr. W. H. Kerr, head of the Colorado division, made a trip to Washington to acquaint the authorities with the advantages of the pinto bean as a food product. Cooking tests were made at his solicitation and the results were eminently satisfactory. Mr. Kerr also called on the big commercial buyers of New York, Chicago and other markets, to give them first hand information about the quality and prospective quantity of beans produced in Colorado.

These assurances of a market will be welcome news to the growers, but let us not lose sight of the fact that the proposition cuts both ways. It is up to the grower to market his beans in good condition. See to it that the thresher and cleaner do a good job; that the beans are not split in the process; that no sticks or pebbles are sacked and offered as re-cleaned beans. If the product is offered in poor condition all the good work done toward establishing a stable market on pintos will go for naught.

There will be the usual differential between the navies and the pintos on account of color. The only way to wipe out this difference is to convince the consumer of the superiority of the pintos as a food product, and that will be the work of more than one season. The great step in having the pinto recognized by the purchasing agencies of the federal government is victory enough for one season.

Prices to be paid will depend on conditions after harvest. Heretofore the government has bought beans for future delivery, but this year no contracts will be made until the crop is harvested. No minimum price has been fixed on beans.

The Michigan Bean Growers' association will determine, on the basis of cost of production and market demand, just about what navies should be sold for, and it is expected that the Colorado association will take similar action in reference to pintos. Growers then will have a figure to guide them. The government, by refusing to contract for future delivery, is setting the pace that will shut out the speculator. Beans, therefore, will sell for just about what they should be worth as a food product, cost of production and worldwide demand for all foodstuffs considered.

The disposition of the government is to pay a fair price and that is all the grower will ask. The speculator will find no comfort in this situation because there will be no chance for exorbitant profits, the food administration always being in the background to stop any tendency toward hoarding or extortion.

Select Bean Seed Now

Every bean grower without delay should take steps to secure good seed for next year's planting, either from his own crop or from fields which he knows to be free from anthracnose and blight, the bean specialists of the United States Department of Agriculture advise. Seeds from plants killed by frost before the pods are dry and mature should not be used.

The use of good seed—properly ripened, plump, intact and free from disease—is essential for securing large yields. It is crop insurance for growers to lay in their seed while there is still opportunity to inspect the fields, or they can pick from the cream of commercial stocks instead of having to take whatever may be available later.

Seed from carefully selected, clean pods grown in one's own seed plat, of course, are safest. Once the beans have been threshed it is difficult to detect all which have come from diseased pods. It is possible, moreover, in the seed plat by planting the seed in hills and by spraying with Bordeaux mixture to protect the plants from anthracnose, even at an expense not warranted in larger plantings. The grower should see that no one moves among the seed plants while they are wet with rain or dew, when spores of the fungus causing anthracnose most readily are spread.

After the seed is threshed—and this is particularly important in the case of commercial seed—the grower should pick over his seed by hand two or three times and throw out all damaged or diseased beans and those not uniform in size and color. Even commercially hand-picked seed often contains many affected beans. While a few discolored beans are not objectionable for household use, every such seed when planted may spread disease to many neighboring plants. In purchasing beans for planting a germination test should be made and only seed of high quality accepted.

Use of Beans as Hay

Many fields of pinto beans will not mature because put in too late or checked by the dry weather in July. There are two ways of utilizing such crops. They should be fed, or if there is not stock to feed them to, plowed under for a manuring crop. Altho, at the time this is being written, there have been no killing frosts on the plains, letters are already coming in asking for advice regarding the use of these immature beans. A Baca county subscriber writes as follows:

"My beans did not come up until the recent rains. I am afraid that they will not mature. Can they be used for hay? Is it safe to feed bean hay when the vines are heavy with immature pods?"

Prof. Alvin Kezer, agronomist of Colorado Agricultural college, replies as follows:

"Beans can be cut and made into hay. In fact, they make a very good quality of hay. The more partly developed pods on the vine, the better the feeding value of the hay. Of course, if there is a very heavy growth of partially developed pods, the feed will be quite rich and should be fed with discretion, especially when the feeding starts, measuring out the feed and gradually working up to a full feed. It is not necessary to feed all of the bean hay rich with partially developed pods that livestock will eat out of a self-feeder. It is better to dole the quantity out, feeding with other roughage such as silage, sorghum hay, Sudan grass hay, corn fodder, or even straw feeding all of the other roughages that the livestock will eat if the supply of feed is large enough for that purpose, and then feeding not over 10 to 15 pounds a day of the bean vines rich with partly developed pods. There is no serious danger of injury to the stock by feeding in quantity, but better results may be obtained by balancing up the ration."

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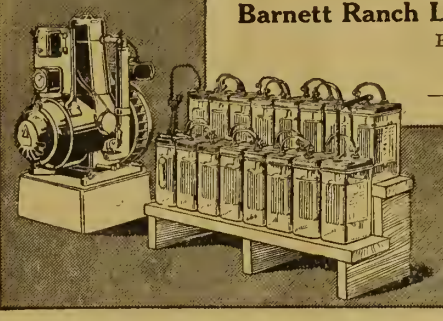

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Hoover at Close Range

Herbert C. Hoover, United States food administrator, called a conference of the editors of farm papers in Chicago a short time ago, at which Western Farm Life was represented by Frederick P. Johnson. At this meeting the editors were privileged to meet face to face the man who has been given power to supervise production and distribution of foodstuffs during the period of the war. Our representative brought back with him the impression that has gone out to the public wherever it has come in contact with Mr. Hoover, namely, that he is exceptionally well fitted for accomplishing the difficult task which the President and Congress have turned over to him. Mr. Johnson states that he seemed to have a perfect grasp of the details of production, consumption and prices, as evidenced by the clear and rapid replies he made to a storm of questions fired at him by those in the conference. It was plain that he had more than a superficial knowledge of the subject and that his knowledge was broad and world-wide.

It is doubtful whether the President could have found another man so well qualified in respect to all the angles of the food question. The place required a man of worldwide experience and international viewpoint; a man who could look at the question from the standpoint of humanity at large and not from that of the nation alone and, at the same time, one possessed of business capacity and executive ability commensurate with the task of harmonizing the conflicting forces and bringing an orderly and cohesive administration out of a chaos of conflict due to the fight between consumer and producer. This large order Mr. Hoover seems able to fill to the satisfaction of all loyal citizens. This is the impression of the man Mr. Johnson brings back with him from personal contact.

Our great problem in this country has been distribution and not production. The problem of production has had the light of scientific investigation upon it for twenty years or more in an organized and capable way, but only in the last four or five years have we given any serious attention to distribution. The war has suddenly made it vital to solve this problem, and now that it has become complicated with international features, thru which it devolves upon us to supply not our own needs alone, but those also of the nations allied with us in the war, as well as some of the neutral nations, the need for a centralized force such as the food administration was apparent. It was apparent, also, that the directing mind of that administration must be one of unusual capacity not for labor alone, but for utilizing the best thought and labor of other able minds; an executive born to the biggest job of its kind the world has ever seen. As is usual in every great crisis of history, the man was ready.

There are always detractors and the Hoover administration is not an exception. The man most conspicuous in the role of detractor at present is Senator James A. Reed of Missouri. One of the things which most impressed the editors attending the Chicago conference was the vast difference in the caliber of the man heading the food administration and those who, even before he began his work, had initiated their efforts to tear it down. Honest differences of opinion there will always be, and occasions may arise when the country will question the wisdom of Mr. Hoover's decisions. No man is infallible. But there is a vast difference between questions of opinion and judgment and spiteful personal attacks such as the Missouri senator has been making in and out of the senate. The food administrator has honored himself by absolutely ignoring these attacks and attending strictly to the business in hand. This is, after all, the best punishment for the notoriety seeking statesman.

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Wake Up, Washington!

"Increase the acreage of winter wheat," is the word that goes out from Washington to the farmers of the West. Fixing the price for the 1918 crop at $2 a bushel and $2.20 for the crop of the present year, takes care of one problem, but there is a more serious one which the government has not yet shown a disposition to solve. Implement manufacturers have for months been trying to impress upon the officials at Washington the fact that the making of farm machinery must continue if the world's demand for foodstuffs is to be met by the American farmer. Of what use is it to grow crops if they cannot be harvested? And there is imminent danger that the wheat grower will find himself up against an implement famine when he comes to harvest the 1918 crop.

This shortage is already keenly felt in the mountain states, especially in the bean-raising sections of Colorado and New Mexico, where dealers have been unable to supply the demand for harvesting machinery, because the manufacturers could not make it fast enough. Shortage of material is due to the fact that every ton of steel is being diverted to the manufacture of munitions and arms.

If there is not some adjustment of this situation at once, many implement factories will be compelled to shut down, or to so greatly curtail their output that thousands of farmers will find themselves next season without the necessary implements to plant and harvest the crops that the government is urging them to grow.

We have been told, time and again, that the war must be won or lost by the food route. If the government in one branch of its service succeeds, as it is doing, in thoroly impressing this upon the producer, and with another arm of the service cuts off the materials essential in carrying out the food production program, the nation will be confronted with an agricultural disaster more keenly felt than a defeat at arms. Let us have level-headed action and co-operation between the forces charged with mapping the nation's defense plans. Unless this co-ordination of effort is soon in evidence it will be the duty of the farm press to ask farmers to desist in their efforts at agricultural expansion. Let Washington wake up before it is too late.

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The Farm Tractor

If the farm tractor had never accomplished anything worth while up to the present year, its performances in 1917 alone would entitle it to the earnest consideration of every farmer. In Colorado and neighboring states the tractor made it possible for many farmers to follow the President's advice for increased acreage of food crops. Many thousands of acres of idle land that, under ordinary conditions, could not have been brought under cultivation for years to come, have, by means of the tractor, been plowed, harrowed and cropped in the course of a few months, and these acres are just now yielding their share of food.

Only a few years ago there was still an attitude of doubt as to the permanent usefulness of the tractor. Today every farmer who has observed, or has had personal experience with the machines, knows that the tractor is destined to be the chief means of farm motive power. Every farmer who can afford it, or whose roads admit of automobile travel, now has or soon intends to buy an automobile. This vehicle puts him in close touch with the market and gives him advantages for social contact with his fellows that he could not have enjoyed while he depended on the slower horse-drawn vehicle. In the same way the farm tractor, under circumstances that permit its economical use, is taking the place of horses for the larger operations, doing the job more quickly, often more efficiently and in the long run more economically than it can be done with horses.

The tractor will not supplant the horse, but it will not be many years until the horse will be the supplementary instead of the chief source of farm power, and the big jobs will all be left to the machines. There are some serious mechanical faults yet to be overcome and there is the fuel question to be solved, but we can safely leave the details to American mechanical genius and make up our minds to the fact that the tractor is with us to stay, just as are other machines and implements that have gradually been supplanting man and horse power in the last forty years.

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Must Increase Wheat Acreage

According to a bulletin just issued by the secretary of agriculture, it is necessary for the farmers of the United States to plant 48.7 million acres of winter wheat to supply the needs of this country, the allies and, in part, the neutral countries of Europe next year. Compared with 1916, this means an increase of 22 per cent, and Colorado has been asked to do her share by increasing her acreage 5 per cent. Other crops must be proportionately increased, but special stress is being placed on winter wheat.

In response to a call issued by Secretary of Agriculture Houston, extension service officials and leaders in agriculture from the various states met in conference for the purpose of making plans for the necessary increase in acreage. The conference for the district including Colorado was held at Kansas City, and this state was represented by H. T. French, director of extension service of the State Agricultural College. Thirteen states were represented and the delegates agreed to the percentage of increase designated to their states by Secretary Houston and promised to use all possible measures to insure this acreage.

States adjacent to Colorado will increase their acreage of winter wheat as follows: Wyoming, 8 per cent; New Mexico, 6 per cent; Kansas, 1 per cent; Nebraska, 1 per cent; Oklahoma, 25 per cent; Utah, 12 per cent.

Every assistance possible in the way of technical information and direct aid thru the county agricultural agents will be given the farmers of Colorado by the extension service of the college, to the end that Colorado may do her share in the production of the world's food supply and her farmers reap their share of the rewards.

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Hogging Down Corn

In these days of high prices for pork, hogging down corn is a profitable and quick method of harvesting the crop. Turn in the shoats at 100 to 150 pounds when the corn is well dented. If alfalfa pasture is not available feed tankage in the self-feeder. When the corn is nearly cleaned up take the pigs out and finish them up in the dry lot. Use the brood sows to finish cleaning up the corn. The high altitude varieties of corn, with their short growth of stalk and heavy ears, are particularly well suited to hogging down, as the animals can easily clean up the field.

With the County Agents

Fremont County.—R. R. Jeffries, County Agent: A silo campaign with Prof. Clark was the most notable work done this week. Five demonstrations with an attendance of 93, averaging 18 to the demonstration, was the record. The interest was better than could be expected for the busy season. At three of the meetings silos were already under way. The meetings were held in districts that had never had any demonstrations of this kind.

Huerfano County—Waldo Kidder County Agent: Have been working hard to get the people to get in silos to save the corn crop that has been damaged by the drouth. One Mexican is now putting down a silo which we planned and worked up the estimates together. Two other men have been in the office the past week to talk silos and feeding.

Pueblo County.—S. V. Smith, County Agent: Five silo meetings were held this week, with the assistance of Mr. R. W. Clark of the extension service. Attendance was not as good as usual because of the unusual amount of work on the farms at this time. Much interest was shown, however, by those present and many of them will dig pit silos this year.

La Plata and Montezuma Counties.—E. D. Smith, County Agent: Visited thirteen demonstrators in the dairy improvement project and secured the transfer of two purebred bulls and recorded the arrival from New York of three more purebred Holsteins. Received orders for five high-grade Holstein cows and effected the transfer of five high-grade Jersey cows.

Boulder County.—H. H. Simpson, County Agent: We have arranged to have an extensive exhibit of Marquis and Defiance wheat at the fair. We secured the co-operation of 20 farmers growing Marquis and 20 growing Defiance. In our exhibit we expect to show sheaf and threshed grain samples of each field, and will also have the data as follows: When planted; kind of ground; date of harvesting, and yield. This will give a good fair test of the two varieties, and as the year is a good average one, we hope this exhibit will be of great value to our farmers in showing the qualities of the two wheats.

Delta County.—Edward H. Divelbiss: Most of one day was spent in investigating conditions relative to the fire blight. In the younger orchards it has attacked the trunks of the trees in many cases and is doing much damage. In one piece of five acres 50 per cent of the trees have either been killed or are so badly infested that they will die in a short time. From indications I judge that most of these infections were brought about by careless pruning, following a serious attack upon the twigs a few years ago. The disease seems dormant in the twigs, but is active in the trunks of the trees now.

Las Animas County.—C. E. Smith, County Agent; C. C. Taylor, Assistant County Agent: Noon picnic and patriotic exercises held by the Spanish Peaks Farm Club. This is a club made up of Mexicans of the better class. They want all the information presented in a way they can understand it and then they accept it without question. This is shown by the way they accepted the oat smut treatment, every member of the club treating. They areall watching their fields with the greatest interest and are all pleased with the outcome, as they have not 1 per cent of smut where last year they had from one-fourth to one-half smut. This club co-operates with the office closer than any other in the county. The yhave a boys' and girls' potato club and are proud of it. Saturday afternoon they insisted on a canning demonstration because some other clubs had been having them, and I gave them one myself, boiling the instructions down to the mere essentials. My family and Mr. Taylor went to this celebration and all rendered valuable assistance in making the day a "red letter" one for those people.

The use of fertilizer has greatly increased in the United States. The state using most freely is Virginia, which makes an application on an average of 400 pounds per acre. The South uses far more fertilizer than the North.

Comment by Farmer Putnam

HE DISCOURSES ON THE RELATIVE MERITS OF THE FORD AND THE SAXON AUTOMOBILE

Denver, Colo., Sept. 10, 1917.

SOMEHOW I hain't been able to git my breath since I made that trip thru Weld county with Vaplon, Sargent and Knapp last month. Vaplon sez it's because of the speed of his Saxon Six, and Knapp sez it's because we didn't go in his Ford; he sez I got the asmay, ketchin' it from Vaplon's auto, which is the cause of my breathin' so hard. I don't know who to believe and I don't dare to take no sides in the controversy, because I'm liable to have to go out with one or t'other of 'em ag'in this fall, so I'm playin' a nootrel game.

I was intendin' to describe the scenery along the way, but them two fellers kept up such a conversation about their cars that my notes got all mixed up and I cain't make head nor tail of 'em. This is the way they read:

"Just passed a fine field of pinto beans on dry land three miles west of Buckingham. Perfect stand. The engine never misses a stroke. I've gone 1,300 miles in this car, never had a puncture; only put water in it twicet. Now with them darn Fords you gotta stop every five miles to water 'em and that's what's bustin' up our dry farmin' districts; they're usin' all the water in the autos insted of puttin' it on crops. The corn was lookin' good and will make 35 bu. if frost holds off. You might have to give a Ford water onct in a while, but that's a hull lot cheaper than gasoline. The government ought to forbid usin' them Saxons durin' the period of the war, because we got to do somethin' to conserve gasoline. The winter wheat was in shock and it looked like about 20 bushels a acre. Cane was headin' out fine and I seen a nice patch of spuds up near the house."

That's the way it was all the way over to New Raymer, Knapp a boostin' the Fords and Vap. a runnin' 'em down and braggin' on his Saxon. Vaplon sez Ford was in the same class with Barnum, makin' money offen the publick and playin' 'em fur suckers by sellin' 'em a four-wheeled skeleton with a tarpaulin over it that had to be fitted out with $200 worth of accessories to make it run. He sez Barnum used to put up a sign in the sideshow tent, "This way to the Egress" and charge suckers 10 cents to go out that way because they thot the egress was a new kind of African jungle bird. Ford's just as bad, he sez, puttin' a jackrabbit on the market and sellin' it fur a automobile.

Knapp didn't say nothin' fur a while, but by and by we come to a sandy stretch of road and Vaplon didn't turn out when we met a Ford. Knapp sez, they all know the Saxon cain't turn in the sand so they gently go around it. But Vaplon sez he could-a turned out but he wouldn't disgrace his Saxon by steppin' aside fur a Ford.

That's what me and Prof. Sargent had to lissen to all the way over, and so I cain't tell you-all much about the country, because my notes was so mixed up with remarks about autos that they don't make sense. On the way back it was not so bad, because we met up with a black cat just as we was leavin' New Raymer and the jinx stayed with us till we got home. Follerin' is a list of casualties:

Blow out one tire.

23 miles of rough road.

Hauled another Saxon in distress 5 miles to Briggsdale.

Busted rope three times in haulin' in car.

Got caught in thunder storm and skidded in mud.

Starter refuses to work; jack up car to start and then don't dare to stop between Greeley and Collins.

Run over lame chicken and put it out of misery.

"That's what a black cat will do even to the best of machines," sez Vaplon.

"If it had-a been a Ford a whole herd of black cats wouldn't give it so much as a slow leak," sez Knapp.

There I'm goin' to leave the controversy, it bein' not fur me to judge, because I has to ride in all kinds of autos. All has their good points and bad, and me bein' one of them chronic gasoline guests, I has to say a good word fur all of 'em. If I'm travelin' in a Lozier I like the big engine and the powerful pull; if it's a tin Lizzy then it's me fur the hoppin' motion, because I been on the ocean and never git seasick. A feller in my business has got to accommodate hisself to all kinds of conditions and every kind of vehickel. I reckon I could ride on a camel's back after all the exercise I've had on the buckin' Fords and the anglin' Saxons. I allus brag on the car I'm ridin' in and when she goes over a big bump and my head hits the rafters I sez, "Mighty fine springs you're car has got." After fixin' a leak I allus insist on takin' my turn at the hand pump, because I like the exercise, but I tell 'em I sprained my wrist last week and cain't do much. You got to use judgment in ridin' with your friends.

Knapp, bein' the county agent, we kind-a roasted him about the roads in the east part of the county. Weld has just built a courthouse of white marble that cost $417,000 and this year's taxes will finish payin' fur it, which is all well and good to look at and show to people, but a little hard on the farmers over around New Raymer and Buckin'ham, that has got 60 miles to go over bad roads so's to pay their taxes on the new courthouse. Them marble palaces fur county officers to occupy is alright, but I'd a heap ruther see a county spend its money on good roads and git along with a brick buildin', even if it ain't fit to show to tourists. Them farmers in eastern Weld has got the right idee. They spend their money fur fine rural high schools, providin' a fit place to eddicate their children.

It don't do to give the county officers such a swell place to smoke cigars in. It's too hard to pry 'em loose from their jobs when things is so pleasant. They git like the prisoners in a warm, comfortable jail and don't care when their sentences expires, and will steal chickens to git back in. Weld county hain't had no trouble keepin' the new jail occupied since it was finished. It's a pleasure to be confined in a place that's got all the comforts of a swell hotel and is a better home than most of the prisoners was ever in before. I'm sayin' this because I judge the buildin' just west of the Greeley courthouse to be the jail. If it's the Elks Lodge then I'm in bad with the lodge members; if it's the jail then the prisoners has got a kick comin', so it's as broad as it is long, somebody's hit and the hitter and the hittee takes the consequences.

Greeley is a enterprisin' town and I like to visit with 'em. I hope they won't take it too hard what I said about the courthouse, because I told them people around New Raymer I was goin' to roast the county commissioners fur neglectin' the roads and buildin' marble palaces. Havin' did my duty like a man I now apologize to the Greeley people and hope they don't hold it ag'in me, because I admire good public buildings as well as anybody.

There's lots of things fur the sightseer in Greeley. The high school is another fine building—finer in architecture than any Denver school, and nobody ought to ever go to Greeley without seein' Ed Foster, the Penny Ante man of the Weld County Democrat. Foster used to run that column in Fort Collins, but the people didn't support it because it suggested poker, and poker is one of the games nobody in Fort Collins plays at home. They try to keep the town holy and unpolluted and if any of 'em gits to feelin' wicked they take a trip to Cheyenne or somewhere. All of them northern Colorado towns is more or less that way. They don't stand fur no wickedness—inside of the city limits.

THOMAS JEFFERSON PUTNAM.

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Tractor Tests

Conducted at Fremont, Neb.

July 26 to August 2, 1917, by the Agricultural Engineering Department of the University of Nebraska

Prof. L. W. Chase in Charge

A series of interesting tractor tests have just been made. Every farmer may now know facts.

The object of the experiments was to determine under actual farm conditions the amount of fuel required and the rate of doing various field operations, and to study the quality of the work done. Also the effect of different depths of plowing in the same field.

The tests were not of a competitive nature, but were made with the object in view of observing tractors in actual farm work so that all farmers might have actual figures.

The tests were made with Case tractors operating standard farm equipment, under the auspices of the Department of Agricultural Engineering of the University of Nebraska, directed by Prof. L. W. Chase, assisted by Prof. O. W. Sjogren, Mr. Louis Runnels and Mr. Ray W. Carpenter.

For Free Distribution

A bulletin has just been published covering twelve tests. This is the first authoritative statement of its kind.

It shows the equipment used, the kind of fields, the different operations. Of chief interest to all farmers is the fuel consumption and cost per acre. Much of this information has hitherto been speculative. Now it is down in black and white. It shows the advantages of Case tractors.

Some of the Data

Each test is complete. Different size tractors are used. Some tests are for plowing at different depths. Some are for spike-tooth harrowing and disking, drilling, etc.

Kerosene was used, and based on a cost of 8½ cents per gallon, the cost per acre for plowing under different conditions and depths is shown. These are exact figures—not estimates. The temperature was 100 degrees in the shade—but the heat, however, had no effect on the operation of the tractors in any way.

Send for Your Copy

This bulletin created a sensation at the Fremont Tractor Demonstration. All farmers have been waiting for conclusive figures. Case, the leader for 76 years in power farming, now sets a new pace. No farmer should fail to get this bulletin.

Copies are free. Merely send us your name and address, asking for "The Tractor Tests Bulletin," and a copy will be forwarded at once—without charge. The first edition is just off the press. So don't delay—write today.

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Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and thru the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE. Denver, Colorado.

Feeding Orphan Colt

I have a colt two months old from a mare that died. Would like to know if I am feeding it right. I give it a pint of cow's milk five times a day, and feed alfalfa and a little dry bran. Please tell me what to do.—W. E., Boone, Colo.

I think you could probably give your colt a little more milk than what you are giving at present, unless the milk is very rich, in which case it would pay to dilute it with water or separated milk. It is customary in feeding colts to dilute the milk slightly and then add a little sugar. A teaspoonful of lime water in the milk at each feed will prevent digestive troubles. I would think the colt would take at least one quart of milk four times a day by now. Your bran and alfalfa are both excellent feeds. Let the colt have all it will eat of the hay and give it fresh water at least twice a day.—Chas. I. Bray, Colo. Ag. College.

Divorce Questions

1. Can a woman get a separation from her husband on ground of cruelty if he swears and curses her?
2. If they have small children, can she have charge of them?
3. Can she claim alimony and how much?—C. M. C., Colo.

1. Cruelty is a cause for divorce, but the question of whether swearing and cursing a wife would be considered a sufficient cause is a matter for the court or jury before whom the case is tried to decide.
2. Whether the mother is given custody of the children depends upon circumstances brot out at the trial. In some cases custody is divided, the father having charge of the children a part of the time; or being permitted to visit the children at specified times.
3. The question of alimony depends largely upon the husband's income. In ordinary cases he is compelled to make such provision for his wife and family as his income allows, that also being a question for decision of the court, after all the circumstances have been brot out.

Hiring by the Month

1. Can we treat winter wheat with formalehyde to prevent smut?
2. If a man is hired by the month and he begins work say on the 9th of one month, does his month end the 9th of the next month or in 26 days?—C. R. R., Weld Co., Colo.

1. Method of treatment for winter wheat with formaldehyde to prevent smut is given in another part of the current issue.
2. If a man is hired by the month the period of his employment must cover the next thirty days. However, if it is desired for the sake of convenience in paying his wages and he was engaged on the 9th of the month, he could be paid on the last of the month for 26 days' service on his monthly basis and the next month to start with the first.
2. If persons passing thru your corrals to avoid the bad hill fail to close the gates and stock gets in and damages your crops, they can be held legally responsible for such damage. Of course, it is difficult for you to trace and prove who left the gates open unless you are on the watch. Get some other influential farmers to go with you before the commissioners and state the case to them strongly; perhaps you can get them to take action,

Savors of Fraud

In response to the questions of H. S. I beg leave to submit the following answers, also giving the questions, so that your readers may interpret the answers correctly.

1. Does holding a fourth class postoffice exempt you from living on your homestead? A. No, it does not.
2. If you sleep on homestead two or four nights out of week during the seven months you live on it, can you prove up and at the same time eat and wash and live during the day on another ranch? A. The homesteader who tries to do this may get into trouble. He is apt to be contested any time during the lifetime of the entry.
3. If you are worth $15,000, can you homestead? A. One's financial condition has nothing to do with homesteading, provided the homesteader has not exhausted his right, or is not the owner of more than 160 acres of land when he makes the entry. This last provision, however, does not apply to the grazing homestead act or the enlarged homestead law.
4. Does a widow have to live on her land if she improves it? A. If the widow in question files on land herself, she must make full compliance with the law, the same as anyone else. If she is the widow of a deceased claimant, she need not live on the land, provided she keeps up the improvements.
5. If I homestead 320 acres, don't live over six or eight months on it, and get witnesses to swear I lived up to the law, and get my deed, and someone proves this on me, will I lose my claim, and what about my witnesses? A. To answer the last question first, the witnesses are liable to go to the penitentiary, and it is a question whether the claimant would not beat them there. This question savors altogether of fraud, and if one tries to defraud his government, he must accept the consequences. He certainly would lose his claim if he tried to do anything like this, and should land in the penitentiary to boot.—M. D. McEniry, Chief Denver Field Division, U. S. Land Office.

Squelching the Squashbug

I have a nice patch of spuashes and would like to know which is the best medicine to kill bugs. Also to kill bugs on beans.—B. E. G., N. M.

If your squashes have been attacked by a worm called the squash vine borer, that bores into the stems, nothing can be done by the use of an insecticide. Spraying with an arsenate of lead solution before the eggs are laid on the vine is a preventive, but when this worm once gets into the vine the only remedy is to cut it out with a sharp knife, making a lengthwise slit in the vine. If you find little holes in the vine, the edges of which are covered by a scum or "dust," you will know the worm is there. After the worms have been cut out the cut spots should be covered with dust to facilitate healing and the vines should be covered at intervals of a few feet with damp earth, over the base of the leaves, so that new roots can be formed there. All vines that have been infested with this insect should be destroyed after the crop is gathered. If the vines have ben attacked by the squash lady-bug, the method is to hand-pick the vines. If your patch is too large for that, spray the vines with arsenate of lead. The squash lady-bug is three-eighths of an inch long and can be easily recognized by large black spots, seven on each wing, on a yellow background. Two pounds of dry arsenate of lead to 50 gallons of water will make a solution of sufficient strength to destroy these insects. The quantity can be reduced to suit the size of your field or garden. The same mixture is used in preventing insect damage to beans.

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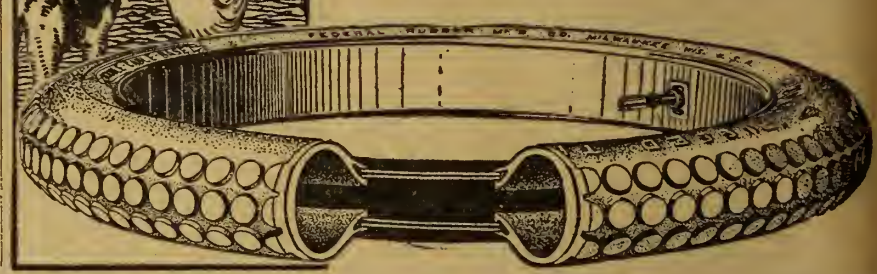

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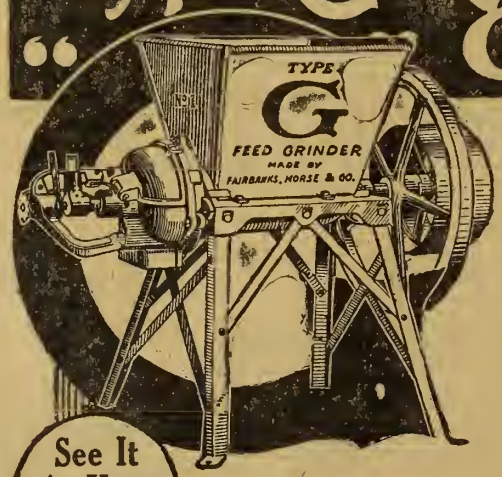

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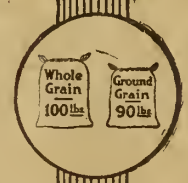

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Dairying and Hog Raising

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Free advice on the commercial or technical features of dairy farming and hog production. Please address your letters to DAIRY DEPARTMENT, WESTERN FARM LIFE, DENVER, COLO.

The Manufacture of Cheese

More nations may enter the present world war and larger armies may be raised on one side or the other, but the deciding factor for winning, that of food supply, grows correspondingly in increased importance. To meet this need, more acres are being tilled and greater production is also being required from those acres that have been under cultivation. Dairy farming is playing an invaluable part in this test of food resources and production.

Manufactured dairy products of every kind are needed in larger quantities. American cheese is especially gaining its place of favor as an economical food product. In many sections of the country new cheese factories are being built; in some instances creameries are being changed or additions made for the manufacture of cheese. The great cheese centers of America, such as Plymouth, Wis., are increasing their output daily. So excessive is the demand that the bulk of all cheese handled is going on to the market as uncured or so-called green cheese. The product cannot be held at the factories, wholesale houses, or cold storage plants long enough to cure, as in former days. In the better cheese producing districts of Wisconsin factories can be found on nearly every alternating cross-road, so that in no case does a farmer haul his milk more than one to two miles.

From every 100 pounds of milk delivered, eight to twelve pounds of whole milk cheese is made. The whey is skimmed of all remaining butter fat and from this fat a good quality of butter is made. The whey is then turned into large tanks, from which it is drawn for hog feed. The farmers feel that they get the best results from it when fed to growing pigs that are running to alfalfa or clover pastures.

Skim milk cheese is an unknown product among the cheese makers and dairymen of Wisconsin; it is scorned in the same light as a substitute dairy product. Among the older men of the cheese business, remembrance lingers of the time when skim milk cheese was not required to be sold under brand and Wisconsin cheese was a drug on the market, the market holding that good cheese could come only from New York or New Jersey. Skim milk cheese can now be manufactured and sold in Wisconsin, but it must be sold in a form that will acquaint the buyer with the quality at time of purchase. In former days people would unsuspectingly buy skim milk cheese at cream cheese prices, then upon eating the hard, rubbery stuff would naturally condemn it as a poor product, and all Wisconsin cheese suffered under similar classification after a period of such purchases, and outside cheese of a labeled standard would thereafter be bought if possible.

Colorado cheese is now in a similar position to that of Wisconsin cheese a quarter of a century ago. Good cheese is hard to buy upon our markets unless we are fortunate enough to be able to buy the product of some of the local plants that make whole milk or cream cheese. Wisconsin has proved to her own satisfaction that a butterfat requirement on cheese has been a great factor in securing their high standard. During the last legislature in that state the manufacture of a high quality of cheese was further insured by making a moisture content standard. Butter made from the fat or cream skimmed from the whey is labeled and sold as "whey butter."

Most of the factories handle from 12,000 to 20,000 pounds of milk a day, making a ton or more of cheese daily during the flush season. Just as soon as possible after the cheese comes from the presses it is taken to the dealers or wholesalers, where it is paraffined, standardized, and if time or market demand will permit, it is put in cold storage of about 40 degrees F. The old days of curing at factories have passed, curing rooms having been torn down or changed to general storerooms. The majority of the plants are local co-operative factories. Cheesemakers are given a contract to lease or operate the plant for 2 cents a pound on all cheese made, the maker furnishing all materials, such as salt, rennet, etc. In some sections these same factories market thru their own wholesalers' establishment, where another three-quarters of a cent per pound is charged for paraffining, handling, storing and marketing.

The Holsteins are recognized as the best dairy cows for cheese production and are used almost exclusively around the larger cheese centers. A few of the old red dual-purpose cows can be found scattered thru some of the herds, but they have had to give way almost altogether to the specialized dairy breeds.

Dairying is now being followed in Wisconsin as the leading agricultural industry, because it has proven profitable to those who have engaged in it, by making them financially independent and prosperous; because dairy farming has brought back the productivity of the soil after it had been depleted by continued crop and grain farming. Now the soil is growing richer each year; towns and communities are prospering and progressing, all are founded and depending upon the agricultural welfare of their surroundings, a future is insured, based upon a most permanent and profitable industry.—R. McCann, deputy dairy commissioner.

FRICTION

The seams and pores in an axle can only be seen with a magnifying glass but they cause friction. Use

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on your axle and prevent friction. It is made of the finest grease stock and powdered mica. It fills the pores and gives the axle a bright, hard coating. Does not gum or stick.

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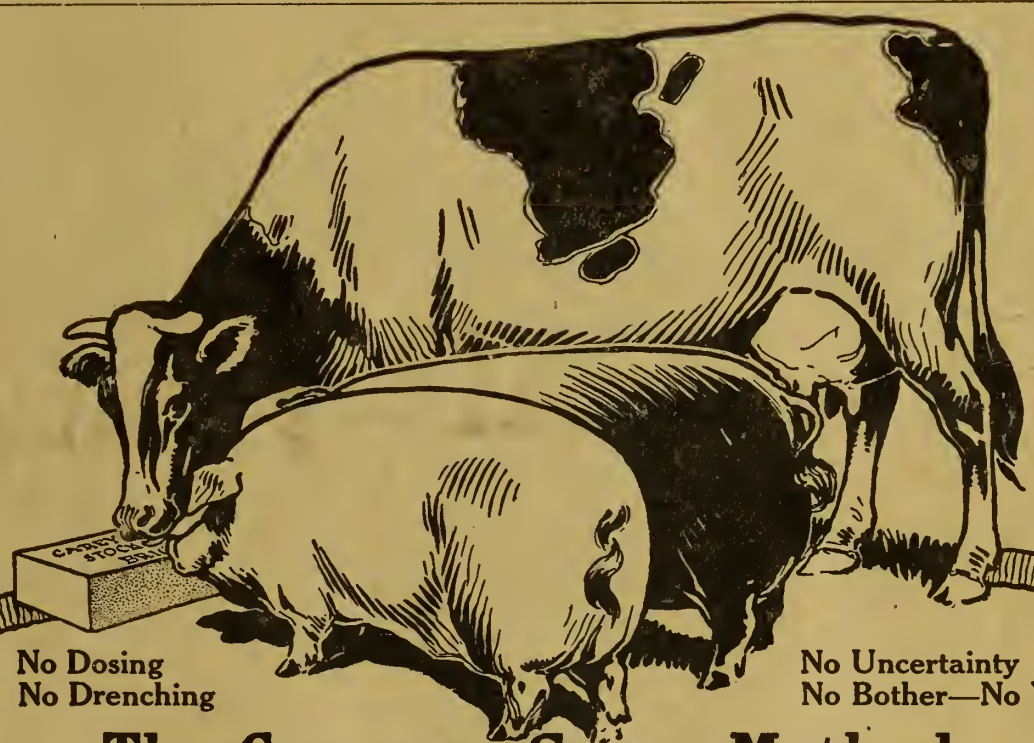
Answer to R. E. G., New Mexico:

Mares usually come in heat about the seventh or ninth day after foaling, and twenty-one days thereafter. There is no regular period for the return of heat in mares, they being more irregular in this respect than the females of other domestic animals. The period of heat usually lasts about five days, and will recur at intervals of twenty-one days more frequently than at shorter or longer intervals. Mares sometimes show no signs of heat, at other times nervousness and a discharge from the vagina are evident indications.

Cows show heat three or four weeks after the calf is born and there is recurrence every twenty-one days. Cows usually stay in heat only one day. A discharge from the vagina, often slight; riding of other cows in the yard; and in heifers, swelling of vagina or one quarter of the udder, are signs of heat.

Sows show heat the third day after farrowing, and not again until after the pigs are weaned, except in rare cases. Heat recurs every 21 days.

I would not enter on my list of friends,
Tho graced with polished manners and fine sense,
Yet wanting sensibility, the man
Who needlessly sets foot upon a worm.
—Cowper.



No Dosing
No Drenching

No Uncertainty
No Bother—No Waste

The Common Sense Method of Preserving Animal Health

Place Carey-ized Stock Tonic Brick in the feed lot or feed boxes, where your animals can get at it all the time and you give them the surest and most economical health insurance ever offered the American stock feeder or his live stock. The Carey-ized Way is nature's way. It enables animals to get the right medicine in right quantity at the right time. Does away with costly and troublesome powders and bottled medicines.

Carey-ized Stock Tonic Brick is all pure medicine. It contains all the ingredients approved by medical science to keep the stomach and liver, bowels and kidneys in healthy condition. Destroys worms, purifies the blood, prevents fever, and with the aid of ordinary good feeding builds up a strong, disease-resisting constitution. Its solid brick form makes it convenient to feed, preserves its medicinal value, prevents waste.

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J. O. Schuler, R. F. D. No. 3, Hutchinson, Kansas, writes: "If every farmer knew the good this Carey-ized Stock Tonic Brick will do, they would not experiment with all kinds of powders that are on the market. You surely have the right thing for knocking the worms."

C. W. Thompson, Hutchinson, Kansas, writes; "300 of our sheep were scouring badly, and in run down condition. Those sheep are now as healthy as the balance of the flock. They are gaining faster than any lot of sheep I ever saw, as a result of feeding Carey-ized Stock Tonic Brick."

Satisfy yourself of the great health promoting, money and trouble saving value of Carey-ized Stock Tonic Brick. We guarantee it to satisfy you or refund all your money after 30 days' trial. Fill out and mail us coupon today, or write us a postal. Our booklet "Making Live Stock Pay" free.

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CAREY SALT COMPANY Department 251 Hutchinson, Kansas

Our Liberal 30 Day Trial Offer

Order a dozen or more Carey-ized Stock Tonic Brick from your dealer. Let your animals have free access to it for 30 days. If you are not satisfied with the result, return what you have left and get all your money. We could not afford to make this generous offer if we did not know that Carey-ized Stock Tonic Brick makes good every claim we make for it. If your dealer does not handle Carey-ized Stock Tonic Brick, write us his name and we will see that you are supplied.

CAREY SALT CO.
Dept. 251, Hutchinson, Kansas
Please send me full information on Carey-ized Stock Tonic Brick; also Free Book "Making Live Stock Pay."
My dealer's name .....
P. O. ..... *State* .....
My Name .....
P. O. ..... *State* .....

The Farm Home

MRS. H. T. FRENCH

Questions about home problems promptly answered by letter and thru the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

Menus for September

SUNDAY

BREAKFAST
Cantaloupe or Peaches
Poached Eggs on Toast
Coffee

DINNER
Braised Breast of Lamb — Mashed Potatoes
Boiled Rice — Sliced Tomatoes
Peach Dumplings, Hard Sauce

SUPPER
Creamed Oysters — Tea Biscuits
Rolled Jelly Cake — Tea

MONDAY

BREAKFAST
Hashed Potatoes with Meat
Corn Bread — Doughnuts
Coffee

DINNER
Potato Soup — Wafers
Hamburg Steak, Tomato Sauce
Summer Squash
Wafers — Cheese — Grapes

SUPPER
Corn Fritters — Cold Slaw
Cup Cakes — Cocoa

TUESDAY

BREAKFAST
Cereal (cold or hot) Cream and Sugar
Plain Omelet — Rolls
Coffee

DINNER
Clear Tomato Soup
Pot Roast of Beef with Gravy
Potatoes (boiled in jackets)
Cucumber Salad — Cheese
Wafers — Cherry Roll
Coffee

SUPPER
Fish Souffle — Gems
Sliced Peaches
Tea

WEDNESDAY

BREAKFAST
Flannel Pancakes with Honey
Fruit — Coffee

DINNER
Boiled Corned Beef
Potatoes — Cabbage (Hot Slaw)
Cantaloupes

SUPPER
Baked Corn Budding — Sliced Tomatoes
Bread and Butter — Tea

THURSDAY

BREAKFAST
Omelet and Bacon
Creamed Potatoes — Muffins
Coffee

LUNCH
Clam Chowder
Pickles — Molasses Cake
Green Apple Sauce

DINNER
Tomato Bisque
Nut Loaf — Brown Gravy
Riced Potatoes — Cauliflower
Lettuce Salad
Apple Pie — Cheese
Coffee

FRIDAY

BREAKFAST
Fruit
Waffles — Maple Syrup
Coffee

DINNER
Corn Soup — Baked Fish
Sliced Tomatoes and Cucumbers
Peach Shortcake — Cream
Coffee

SUPPER
Scalloped Potatoes and Cheese
Hot Tea Biscuits
Sponge Cake — Fruit

SATURDAY

BREAKFAST
Panned Bacon and Liver
Doughnuts — Coffee — Toast

DINNER
Clear Soup
Roast Duck — Fried Apples
Squash — Lettuce and Egg Salad
Peach Ice Cream — Cake
Coffee

SUPPER
Creamed Sweetbreads — Bacon Sandwiches
Cake — Fruit — Coffee

Note: Will someone write us an outline for one day's work; just how she did it?

A Sequel to "Dinner for Ten"

I have just read the article in Farm Life, "Dinner for Ten at $1.75." Now if I could speak my thots to you I could express them more rully, but will take this means to do the best I can. I would like very much to know how a housewife can spend $1.75 for one meal when the income is but $2.50 per day and that not regular. I paid 85 cents for a roast. I had six people to dinner and we ate all of that roast, so I have not bought meat since (a week ago). I wonder where the person bought the steak to have enough for ten persons for 60 cents. Apples are selling here for 12 cents per pound and celery comparatively the same. I think all these suggestions, or most of them at least, in regard to cheap living are very impractical and people who have a hard time of living at all these days don't write them. This person must have gotten this menu mixed up with some they had several years ago. I do not care whether you print this or not. I feel relieved.—Mrs. I. M., El Paso Co., Colo.

This was a fair challenge to the author of the article "Dinner for Ten at $1.75," so the letter was sent to her for reply. The answer is as interesting as the original article, and our women readers will find in it food for thot, which is often as satisfying as our material food and costs a lot less in these parlous times.

Dear Friend:

Now and then in the dull, grey monotony of everyday life, something unusual, relieving, occurs. Your good letter was a big relief. Words can't express all that I thot as I read it. I had one strong desire and still have to take your hand and thank you. We are such hypocrites, such monstrous self-deceivers, that not one woman in five thousand would have had the courage to tell the truth as you told it.

It is a great pleasure to me, to be permitted to explain to you the errors which you felt were in the article "Feeding a Family of Ten on $1.75" in the issue of July 15th. The article as written was more comprehensive and hence explanatory, than as published, owing to lack of space and a few other things. One of the passages cut out contained the date on which the prices given were in operation.

The meal (No. 1) was prepared in honor of the visit of the editor of Western Farm Life. To be sure, no housewife on a limited allowance could serve a $1.75 meal very often. But then one does not have so celebrated a guest very often! Should he come your way, in his defense I must say that a meal costing 5 cents per person would be relished by him just as much as a more expensive one, if served with the sauce of your sterling straightforwardness.

Now, as to the steak costing 60 cents and serving ten people—on the day on which the article was written I called up the meat market and was told that round steak was 30 cents per pound. In order to make the two pounds "go round" I made a dressing or "stuffing," as we used to call it, of dry bread and cold soda biscuit, seasoned with onion, sage, salt and pepper and moistened with rich milk (I find it cheaper than oil or butter). Making a good-sized loaf of the dressing, I wrapped the steak around it and tied it up to prevent losing either shape or dressing, steamed two hours, brushed over with fresh fryings and browned it in the oven. The steaming forces the meat juices thru the bread. In serving I sliced it as tho it were a meat loaf. Apples were of course much cheaper then than now, and as I remember the original of the article, I said that this meal could be prepared at almost any time and in ALMOST any place. The cost would necessarily vary. You say that you would like to know how a housewife can spend $1.75 on one meal when her income is $2.50 per day and that not regular. I couldn't. No one could, unless they fasted the rest of the day. At the time the articles of June 1st and July 15th were written, it was costing me $2.00 per day to feed ten people. Just now a large garden is the "friend in need," but if all supplies came into the house "in a paper sack" I could not furnish the table for $2.00 per day at present prices. I think that you and I are doing the same thing, belong in the same class, just doing the best we can and glad that it isn't any worse.

Here is something that was given me last week by an English woman, trained in her own country in household efficiency. She thot it would help meet the high price of meat as well as give the children good, nourishing food. I suggested that she had left out the baking powder, but she laughed and said "Not one bit of baking powder." I had intended experimenting with it before writing this, but unfortunately (or fortunately) I am now in the far country, and getting suet is out of the question.

1 oz. suet chopped
8 tablespoons flour,
Salt

Mix with sweet milk to a soft biscuit dough, roll one inch thick and spread with jam or molasses. Now roll as for a jelly cake and place on a square of muslin, across one corner. Roll in cloth, folding in opposite ends of cloth as you roll to prevent jam running out, drop in boiling water and boil two hours. When done, take hold of top corner of cloth and the pudding will roll out ready for slicing.

The problem of the salary, the price and the supply is as tho the salary or daily wage were the hook on which the scales hang, with prices in one pan and supply in the other.

I am indeed sorry that the article gave the impression that I was trying to teach other housewives what they already knew, perhaps, better than I did. I am not an expert or authority on house management, and my only claim to place in this fight for existence (or shall we say subsistence) is, that necessity has forced me to strip to fighting trim in my planning, buying and managing.

Believe me, if the food speculators are allowed to continue holding the balance of power, we will soon all be either experts, or where the mule was when his owner had him trained down to one straw!

On my way to the ranch yesterday I bought four bars of soap for 25 cents. The storekeeper apologized, saying that soap was going up "awful high," and I wondered if we were not in the times referred to in Revelation 22:11, "He that is filthy, let him be filthy still."

JOSEPHINE LEE FERGUSON.

(Correction: There is but one criticism of Mrs. Ferguson's letter and that is purely a personal matter. She refers to the editor as relishing a meal served at 5 cents per person as much as one more costly. She flatters the editor's faculty for diplomacy. We do not wish such a misconception to gain credence among our farm subscribers, as we like to visit around.—Editor.)

Began As Farmer Boys

At a luncheon which they recently attended as guests of honor, the following men stated that they began life as farmer boys:

Judge E. H. Gary of the Steel Corporation.

F. W. Woolworth, the originator of the five and ten-cent stores.

Darwin P. Kingsley, president of the New York Life Insurance Company.

Frederick T. Haskell, vice-president of the Illinois Trust Company of Chicago.

Whether taken as a stepping-stone to an office position, or only for the value of the training, a business course supplies the boy on the ranch with a most useful and desirable education at a small outlay of time and money.

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Sick Room Supplies,

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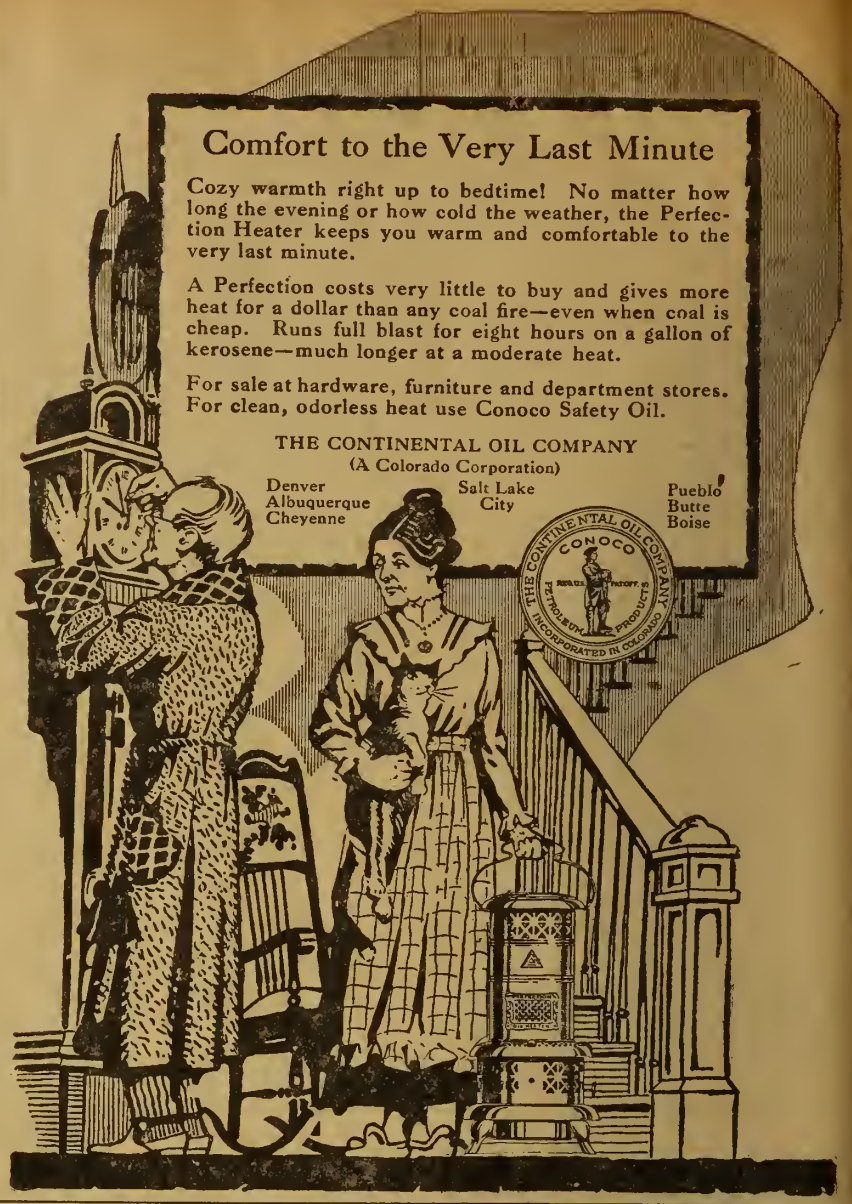

PATTERN DEPARTMENT

All Patterns 15c each. Address WESTERN FARM LIFE, Pattern Department, 14th and Arapahoe, Denver, Colo.

1963—New and Pleasing Apron. Cut in sizes 34, 38, 42 and 46 inches bust measure. Requires 5¼ yards 36-inch material for size 38. This model is comfortable with its semi-fitting lines and trim shape. The skirt is cut in pointed outline at its upper edge, at the back; waist and skirt are cut in one.

2140—Popular One-Piece Dress. Cut in sizes 34, 36, 38, 40, 42 and 44 inches bust measure. Size 36 requires 7 yards 36-inch material. In this instance, plain and figured shantung are combined. The waist portions are plaited and joined to straight skirt sections.

2133—Smart and Popular Style. Cut in sizes 8, 10, 12 and 14 years. Size 10 will require 4¼ yards 44-inch material. This is a lovely dress for the growing girl and may be readily applied to various combinations of materials.

1743—Pretty Frock. Cut in sizes 12, 14 and 16 years. Requires 1¼ yards 27-inch material for the under waist and 5½ yards for the dress for the 14-year size. Crepe, taffeta, voile, dimity, challie, organdy, net or messaline would be nice for this. The under waist could be of contrasting material, or in high or square low neck.

Profitable Farm Poultry

W. E. VAPLON

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries Poultry Department, Western Farm Life, Denver, Colorado.

If a hen eats a bushel of grain a year,
And if it costs 10 cents to house her a year,
And if it costs 25 cents in labor to care for her a year,
And if 10 per cent of the flock die during the year,
And if the remaining 90 per cent average ten dozen eggs for the year,
And if one-half of these eggs are laid during the three months of lowest prices,
How much money is there in the hen?

Needless to say, the coming year, unless feed prices tumble, will see many a commercial poultryman sell out or get out of the business. Cost of production is the big determining factor of profit or loss, and the day has gone by, if it ever was here, when a man can just feed a hen, sell the eggs, and make money. A man came to our office a few days ago to talk over the prospects of money making in producing eggs, and we just had to put up the above problem to him. The only man who can make money in the poultry game right now is the farmer, and not many of them will do it. More than ever can the farmer come into his own with a NICE flock, just enough to utilize the waste products of the farm. Small vegetables, such as onions, spuds, beets, turnips, etc., that are usually allowed to rot, may be put away to be cooked up when the fowls must be kept up next winter. The stubble and alfalfa fields will furnish enough feed and great variety until cold weather; the feed lots will help out greatly during the winter, and all the grain eaten by the fowls will be clear gain. Shrunken or broken grain, broken beans, peas, etc., can be made to bring the cost of feeding on the farm to a very low figure and it will cost the farmer less than half as much to feed his hens next winter as it will the commercial poultryman.

Those who are figuring on one-dollar eggs next winter will most likely be disappointed; people don't need eggs badly enough to pay such a price, and won't need to, as the storage warehouses are full of eggs that can be sold at half that at a good profit; and people, city people, who buy most of the eggs, rather prefer storage eggs; they are used to the heavier flavor and consider fresh eggs "flat." But that old delusion that a high price received means a profit will induce many a poultryman to hang onto a lot of old hens and immature pullets in the hope that they will understand the needs of the country and hurry thru the molt or begin laying at five months of age.

We have traveled over the country a good deal of late, have sized up scores of farm flocks, and it makes us mad to see the stuff growing up into "winter layers." We have yet to see a vigorous, thrifty lot of pullets that are anywhere within eleven miles of laying before cold weather. Instead of paying good money for a rooster or setting of eggs from a "laying strain," why not buy an incubator and a BROODER, especially the latter, and hatch your layers seven or eight months before you want them?

"Laying strain," "feed," nice "hen houses" won't do the work, and until we do things at the right time there will be no money in the hen game.

We have seen lots of good turkeys and more geese than ever before. With good range these will probably make some money, but the only hope of making money from eggs at present prices of feed is to utilize waste products and dispose of everything but the early vigorous pullets.

Cabbage for Chickens

Have lots of cabbage and no market for it. Have lots of chickens and would like to fix it some way so I could feed the cabbage to the chickens this winter. Please tell me the best way to fix it to keep it thru the winter.—L. J. K., N. Mex.

We are asking the Experiment Station at the State Agricultural college to send you Bulletin No. 232 on the storing of vegetables. The best way we have found for keeping cabbages is to hang them up by the roots in the cellar, where they are not likely to freeze. Cabbages should be pulled up roots and all, the outer leaves should be taken from the head and the cabbage should be left in the open for at least a day so that the leaves close to the head will become somewhat withered on the outside. Then hang the cabbage from the ceiling in the cellar by the roots. They can be kept in this way at least until February. In feeding them, hang up a whole head or part of a head just what will be eaten during the day, and allow the chickens to help themselves. In the bulletin you will find instructions for storing cabbages in pits, but hanging in the cellar is the easiest way of keeping them.

Again the Foot Ailment

I would greatly appreciate it if you would tell me what you think is the trouble with April and May hatched chickens, showing the following symptoms: They are unable to open their eyes on account of some sticky substance and they have a discharge from the nostrils. They have no cough and seem to have normal appetites after we open their eyes with sour cream. The skin on their feet shrivels and on some of the first victims has peeled off. We have separated them from the rest of the flock and for three days we have had no new cases. They draw up their feet when walking. Would you consider this contagious? I have put a disinfectant in all drinking water. The chickens have free range and I have been feeding wheat and millet as well as sour milk. Also keep bran before them most of the time.—Mrs. H. W. H., Hereford, Colo.

In Western Farm Life of July 15 you will find an answer to an inquiry similar to yours. We are just now trying to determine what disease it is that affects baby chicks and sometimes older stock in the dry land sections of the state, the affliction being first noticed on the feet and then on the face of the chick. We know at the present time no more about the disease than is spoken of in the article, but the Veterinary department at the Agricultural college has been able to secure some bad cases and is now trying to determine the trouble. If you have some very severe cases at the present time, it might be a good plan to send two or three to the college for examination. The loss is quite considerable in the plains section and the pathologist at the college, Dr. Newsom, is doing his best to find the cause and a remedy. From your description, it would appear that not only your chickens have this foot and face disease, but also roup. Certainly every case should be isolated. For treatment we would suggest that the nostrils be washed out with a weak solution of carbolic acid or a weak solution of some coal tar product, such as creolin or zenoleum, but easier treatment might be to dip the heads of the chicks in the solution, causing them to strangle and cough and so clean out the nostrils and throat. Very severe cases should be disposed of, the bodies burned or buried, because roup is very contagious. For the entire flock we would suggest some good disinfectant in the water as a preventive. Crowding should be guarded against and the quarters certainly should be cleaned up, especially to get the mites that will usually be found lodging in the hen house and in the brood coop.

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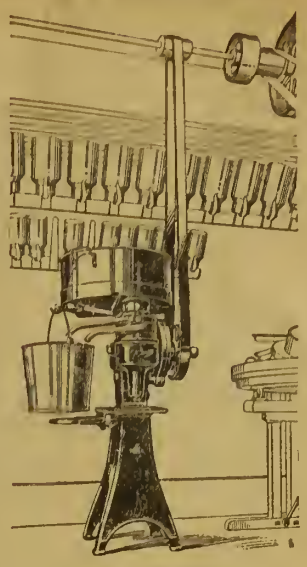

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That is why it pays to be very careful in picking a cream-saving, money-making machine. That is why thousands of prospering farmers have built up their herds around **Lily** and **Primrose** cream separators.

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Harvest the Crops! Save the Yields!

On the battlefields of France and Flanders the United States boys and the Canadian boys are fighting side by side to win for the world the freedom that Prussianism would destroy.

While doing this they must be fed and every ounce of muscle that can be requisitioned must go into use to save this year's crop. A short harvest period requires the combined forces of the two countries in team work, such as the soldier boys in France and Flanders are demonstrating.

THE COMBINED FIGHTERS IN FRANCE AND FLANDERS AND THE COMBINED HARVESTERS IN AMERICA WILL BRING THE ALLIED VICTORY NEARER

A reciprocal arrangement for the use of farm workers has been perfected between the Department of the Interior of Canada and the Departments of Labor and Agriculture of the United States, under which it is proposed to permit the harvesters that are now engaged in the wheat fields of Oklahoma, Kansas, Iowa, North Dakota, South Dakota, Nebraska, Minnesota, and Wisconsin to move over into Canada, with the privilege of later returning to the United States, when the crops in the United States have been conserved, and help to save the enormous crops in Canada which by that time will be ready for harvesting.

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Canada wants 40,000 Harvest Hands to take care of its

13 Million Acre Wheat Field

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An Identification Card issued at the boundary by a Canadian Immigration Officer will guarantee no trouble in returning to the United States.

AS SOON AS YOUR OWN HARVEST IS SAVED, move northward and assist your Canadian neighbor in harvesting his; in this way do your bit in helping "Win the War."

For particulars as to routes, identificaton cards and place where employment may be had, apply to Superintendent of Immigration, Ottawa, Canada, or to

J. L. PORTE, Canadian Gov. Agt., Dunn Blk., Great Falls, Mon.

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Livestock

"Those who advocate leaving veal and young lamb off of hotel and restaurant menus, as well as eliminating them from the home bill of fare are half right and half wrong," says Thomas E. Wilson, president of Wilson & Company, packers.

Mr. Wilson asserts that allowing the largest percentage of the present volume of calves to grow up will better neither milk nor beef production. On the other hand he states that ewe lambs should not be converted into food, but should be allowed to grow, thus increasing the supply of wool as well as of good mutton. In this also there must be some discretion permitted the growers, as some ewe lambs are not suitable to raise for wool or mutton.

"People who think that every piece of veal they see served means diminishing the supply of milk or of beef in the future are mistaken. Most of the calves used for veal are fit only for veal. They would make neither good milch cows nor good beef cattle. They aren't bred of the proper stock for either.

"A good while ago I discussed with the government officials the advisability of placing good beef bulls in different sections of the country, these bulls to be bred free of charge. Something may yet come of this. It cannot be urged too strongly, for right there is where the supply of beef cattle may be increased and bettered and the serious problem of the country's meat supply solved in part.

"Unfortunately, too many dairy farmers are interested only in milk production. Their cows are bred to any kind of a scrub bull and their calves are taken from the cows just as quickly as possible, so that the milk may be had for the market. Now, if these cows were bred to high grade beef bulls, their calves could either be raised by the dairy farmer and sold for beef, or could be sold to some other farmer who will so raise them. As it is, the ordinary calf, which is sold for veal, would not be worth as beef the cost of the corn to fatten it. Therefore its only value is as veal. This does not apply to the up-to-date dairy farmer who breeds his cows to thorobred bulls of breeds known for their milk production. These calves are too valuable to be sold for veal and are raised.

"As to the ewe lamb, I am heartily in agreement with the proposition that we ought to raise all the ewe lambs that are fit to raise for the sake of the wool and breeding. The government and other agencies should co-operate in finding a satisfactory market for the breeders so they can dispose of their excess to people who will raise the ewe lambs. In the first place, the sheep raiser knows that he must have good stock to get good wool, so the majority of the ewe lambs are fit to raise. The lambs, if raised, produce regular crops of wool, and also when they grow up furnish a greater supply of mutton. This, however, does not justify the suggestion that lamb chops should be eliminated from the table as the killing of a large percentage of the males or wethers and many ewe lambs is an economic proposition.

"But as to the veal idea—if the average dairy farmer were to have two bulls—one a good dairy bull and the other a beef bull—he could regulate his stock of calves so that his milk herds would be kept up and at the same time he could raise beef cattle. This will help to relieve the steadily increasing shortage in the milk supply, as well as the meat shortage. Where this is not possible or where the dairyman cannot afford to keep two bulls, some provision should be made by the government or thru some community plan to provide the beef bull."

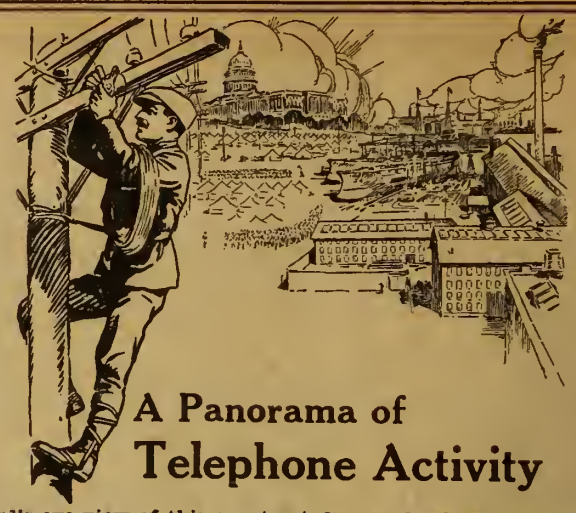
Fallacies in Wilson Statement

Mr. Wilson's statement was submitted to Prof. George E. Morton, who makes the following comment:

"It is not true that dairy calves as a whole are unfit for beef purposes, except in the case of the extremely small type of dairy breeds. Calves of many of the dairy breeds make as good gains on feed as beef calves do, altho they do not distribute the meat over the carcass of the valuable parts the way beef animals do.

"Beef bulls have been used in dairy herds the way Mr. Wilson advocates, but it requires a shifting back to the dairy type bull every two years or so in order to get heifer calves of dairy type to keep up the herd, and the bull calves from this type bring up the same old proposition of whether they should be vealed or raised. Keeping two bulls does not solve the problem, because the heifer calves from the beef bull will not be fit for dairy purposes, and the men engaged in dairying cannot use them, while the bull calves from the dairy bull are of no value except as veal or beef.

"I believe the killing of veal, lambs and pigs under certain weights should be supervised by some officer designated by the state who has authority to provide a market other than slaughter for such animals. If such a market cannot be found by the state officer within ninety or a hundred days then permission should be given for slaughter."



A Panorama of Telephone Activity

A bird's-eye view of this country today would show a panorama of countless military and industrial activities.

Here the smoke of a thousand stacks obscures the view of arsenal, steel and iron works and innumerable factories.

There the sun's rays flash upon thousands of glittering bayonets and rise and set on many new and strange looking cities—the mobilization camps of the armies of the Republic, or gild the wings of swift aeroplanes gliding to and fro in bird-like flight over broad aviation fields.

The National Capitol would be seen, from which all these vast enterprises are directed and co-ordinated, with hundreds of telephone lines radiating from it to all parts of the country, and linking it to each military and industrial center.

A veritable maze of other telephone pole lines, covering the whole country with a net-work of wires, would be visible, connecting city, town, camp, fortification, navy yards, military headquarters, coast-guard stations, and light-houses.

Everywhere busy groups of telephone workers would be disclosed erecting poles and stringing wires to meet new and extraordinary demands for service. All this telephone activity is but a part of the vast work the Bell System is doing.

Join us in this patriotic service, by remembering that the more careful you are to make only telephone calls that are necessary and to confine your talks as much as possible, to the less busy hours of the day, the better we can meet the needs of the Nation.

The Mountain States Telephone and Telegraph Company

GET A WITTE "KERO-OIL" ENGINE

Save $15 to $200

Have More Power—Do your work easier—Get a better engine—**At less cost**—Make more money—Save more fuel—**Immediate Shipment**—No waiting — Five-Year Guarantee—90-Day Trial—Hundreds of engines—2 to 22 H-P.—all styles—**Ready to Ship**—Suit yourself as to terms—Cash—or Payments—or **NO MONEY DOWN** if arranged for. Write for latest book—(copyrighted)—**"How to Judge Engines"**—and latest wholesale factory prices—**Direct.** I ship everywhere in the U. S.—guarantee safe delivery—Save you $15 to $200—make you the best price. I ship big engines—or small engines—on wire orders.—ED. H. WITTE, Pres.

WITTE ENGINE WORKS

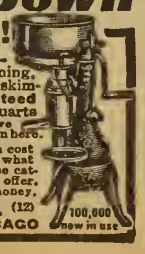
2648 Oakland Ave., Kansas City, Mo.
2648 Empire Bldg., Pittsburg, Pa.

PULLFORD TRACTOR, $135
F. O. B. Factory

Pullford pulling two 14-in. plows. The "Pullford" does the work of four big horses on high gear, attached to practically any make of car in 30 minutes; removed in less time. The "Pullford" will do all your farming, such as plowing, harrowing, seeding, harvesting, etc. Will also do your heavy hauling. No farm should be without one. Live agents wanted in every county in Colorado, Wyoming, New Mexico, Texas, Oklahoma.

THE HEADINGTON AUTO CO.
Distributors
1636 Broadway, Denver, Colorado
Branch Office, 1909 Commerce Street
Dallas, Texas

Only $2 Down
One Year to Pay!



$29 Buys the New Butterfly Jr. No. 2. Lightrunning, easy cleaning, close skimming, durable. Guaranteed a lifetime. Skims 95 quarts per hour. Made also in five larger sizes up to No. 8 shown here.

30 Days' Free Trial Earns its own cost and more by what it saves in cream. Postal brings Free catalog, folder and "direct-from-factory" offer. Buy from the manufacturer and save money.

ALBAUGH-DOVER CO. (12)
2129 Marshall Blvd. CHICAGO
100,000 now in use

GRANGE

It will cost about $1,000 for railroad fare alone to send the Maple Grove Grange degree team to the National Grange at St. Louis in November. The State Grange treasury is authorized to furnish only $100 to the fund necessary to defray the expenses of the members of this team, the balance to be contributed by Granges or individuals thruout the state. This is in accordance with the decision of the Colorado State Grange, in annual meeting last January. Contributions should be sent in immediately, as the time for the National Grange meeting is fast approaching. Any amount will be gratefully received. Funds should be sent to C. W. Swayze, State Lecturer, Stock Yards Station, Colo., who is captain of the degree team, or to Otis Scruggs, State Purchasing Agent, Charles building, Denver.

The Maple Grove degree team consists of 23 members. The Grange is located in Jefferson county, six miles west of Denver. The drill team has often assisted other Granges in installing officers, conferring degrees and organizing new Granges, or awakening interest in organizations that are lagging. This has always been done without recompense and often at the expense of the team.

The State Grange, in recognition of these efforts, decided that it would be a fine thing for Colorado to send the degree team to the St. Louis meeting, there to compete with other crack teams of the country and perhaps come back with first honors. Arrangements are being made for a big delegation of the degree team, the state officers and representatives of the various Granges thruout the state, to attend the St. Louis meeting in a body. By getting up a large party more favorable rates can be obtained. In view of the fact that Colorado is at present leading all Granges in number of new organizations for 1917, it is particularly desirable to have a large representation at St. Louis. Those intending to go should notify Mr. Swayze, who will be glad to furnish information about railroad rates, hotel arrangements, route, etc.

Following is a partial list of contributions already received toward defraying expenses of the drill team: Darden Pomona, $20; Crescent Grange, $10; Central Valley Grange, $10; Henderson Grange, $10; Columbine Grange $10; Pleasant Valley Grange, $5; Enterprise Grange, $5; Golden Rule Grange, $5; Rocky Mountain Grange, $2.50; Florida Grange, $5; Pleasant View Grange, $5; Pine River Grange, $5; Prairie View Grange, $1.50; Prairie Gem Grange, $5; Elk Creek Grange, $5; Happy Valley Grange, $10.50; Harmony Grange, $10.

Guy Hill Grange

There was a good attendance at the meeting of Guy Hill Grange September 1st, at which H. W. Allinger of the United States office of markets explained the work of that department, which aims to assist the farmer in marketing his products. From the number of questions fired at the speaker, it was evident that marketing is a live issue with the farmers. All were eager to hear Mr. Allinger's explanation of the way in which the department disseminates marketing information to aid the producer in getting a fair price for his products. In the absence of Dr. V. T. Cooke, who was to speak on his experiences in Brazil, where he served as an agricultural expert, Alvin T. Steinel of Western Farm Life gave a record of progress made in getting federal loans out among the farmers of Colorado. C. H. Easley, secretary of the Grange Mutual Fire Insurance department, made an interesting report, showing that at the present rate fully $2,000,000 of insurance will be written in Colorado this year. State Master Morris, who was present, reported that Colorado now led the country in number of new Granges organized during 1917, and expressed the hope that the state would remain in the lead. He received word recently from the master of the National Grange that Colorado and Oklahoma were running neck and neck for first place. At the night session there was a splendid talk by Prof. J. Bruce Mather of the State Industrial school. Twenty-eight candidates were given the fifth degree. The ladies served a splendid dinner and supper in a tent adjoining the Grange hall.

Selective Plant Breeding For Drouth Resistance

(Continued from page 4)

gans in such close proximity that the safest course is to cut out the male element before introducing the pollen from which a cross is desired. This is one of the difficulties in breeding wheat and some other grains in which the florets are practically sealed up tight in the glumes, which must be carefully opened up without injury before the operator can work on the interior organisms.

Wheat Hard to Handle

Owing to this peculiar conformation of the flower, wheat is always inbred or self-fertilized and has no chance to receive outside pollen, a ch which helps to make it one of our worst grains to run out; for under adverse conditions of breeding, moisture, culture, climate, etc., there is a tendency in all plants to revert to the wild prototype—to go back or run out. Outside of the breeding problem the best remedies are careful and painstaking selection and good methods of culture.

After the making of a new cross or hybrid comes the fixing of the type. At first reversions according to the Mendel law must be prevented by allowing as little inbreeding as possible; time and selection will finish the process.

In breeding trees, scions from the new creation may be grafted by the thousand and this eliminates all the trouble of fixing the type, for the graft is part of the original.

It is most important in breeding for new varieties to make as many crosses of the subjects used as possible and then to plant large numbers of the progeny in order to allow plenty of scope for selection. The writer has often been asked by botanists, breeders and others as a guide in selecting specmiens for propagation, what qualities in a plant he considers make for drouth-resistance. This is a large subject to discuss here; but by far the most important factor is the root system.

Defining Drouth-Resisters

All perennial plants which bud out from the root at the first sign of spring are good drouth-resisters. Winter wheat which is well rooted in the fall may also be considered in this class. Prof. Watson says of this cereal that a single stool may have as many as 50 roots descending to a depth of 8 feet. and that counting the lateral fibrous roots, the total development may approach a mile in length. Bergen tells us that corn possesses as

(Turn to page 15)

Farmers' and Stockmen's Exchange

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WANTED—TO HEAR FROM OWNER OF FARM or unimproved land for sale. O. K. Hawley, Baldwin, Wisconsin.

WANTED—TO HEAR FROM OWNER OF GOOD ranch for sale. State cash price, full description. D. F. Bush, Minneapolis, Minn.

WANTED—TO HEAR FROM OWNER OF GOOD farm for sale. Send description and cash price. Co-operative Sales Agency, Minneapolis, Minn.

166 ACRES HIGH, DRY RIVER BOTTOM land; covered in switch cane; cattle need no feed during winter; feed on the cane; one of the best stock farms anywhere. Price, $20 per acre. Henry Clay, Winthrop, Ark.

JUST RETURNED FROM SOUTH AMERICA—Aranged for million acre grant; organizing cattle company. Want members join organization who are given 2,000 acres and stock in company for less than 5 cents an acre. Want 60 to 70 members to go to work on ranch. Highest reference. J. B. Shoenfeit, Woodstock, N. Y.

480 ACRES, 16 MILES FROM DENVER, fenced, all in wheat, $20.00 an acre, $2,000 in cash, balance at $500 a year; 320 acres, small house, stables, good windmill, fine well, fenced, 120 acres cultivated, including cattle, horses, machinery and implements, $8,000, one-fourth cash, two and one-half miles from good town. Wolf-Rankin Realty Co., 324 17th St., Denver, Colo.

LET ME SHOW YOU THESE WELD COUNTY non-irrigated snaps. Each offered on account of illness or death, and prices at these very low figures for quick turn. 160-a deeded and 160-a relinquishment, sandy loam, 5 miles from railroad, suitable for stock; fence and well; $1,200. 320-a sandy, 60-a cropped, fair improvements, 7 miles from railroad; stock, forage crop and beans; $3,200. 320-a best of wheat and general farm land, well improved, 2 miles from postoffice, 9 miles from railroad; dandy; $4,500. Send for list and map. Mackley, 1643 Champa, Denver.

I HAVE SOME CASH BUYERS FOR SALABLE farms. Will deal with owners only. Give full description, location and cash price. James P. White, New Franklin, Mo.

GOVERNMENT LANDS

GOVERNMENT LAND. FREE BOOKLET. Joseph Clark, Sacramento, Cal.

LIVE STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

CATTLE

HOLSTEIN HERD CONSISTING OF ELEVEN cows, fresh and coming fresh, two heifer calves, one grade and one pure-bred bull. Will sell entire lot for $900. Write for full particulars. L. Thompson, Aurora, Colo.

SHIP YOUR LIVE STOCK TO US—COMPETENT men in all departments. Twenty years on the market. Write us about your stock. Registered breeding stock bought on orders. Market information free. Ryan-Robinson Com. Co., 225 Live Stock Exchange, Kansas City, Mo.

REGISTERED JERSEYS AND MILKING SHORThorns. Jersey herd headed by Maggie's Shy Duke, 140084, Grand Champion Denver Stock Show. Two nearest dams average 54 lbs. milk per day. Shorthorns headed by Independence Lee 427351. Two grandams average 9023 lbs. milk in one year. The Hinman Silo Co., 1650 Champa st., Denver.

HOGS

REGISTERED, BIG TYPE DUROC JERSEY hogs for sale. Edgemoor Farm, Littleton, Colo. Caldwell Martin, Owner.

POULTRY

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

QUALITY DARK CORNISH, THE IDEAL FARM fowl. W. W. Officer, Fowler, Colo.

QUALITY DARK CORNISH—UTILITY AND exhibition stock for sale. R. H. Jandebeur, Alma, Neb.

A FINE LOT OF VIGOROUS, EGG-BRED S. C. W. Leghorn cockerels for sale. They will improve your flock. Rowley Egg Farms Co., Palisade, Colo.

S. C. BUFF ORPINGTONS—COCKS, COCKerels, hens and pullets. Get my prices and breed Orpingtons. F. M. Shank, Route No. 2A, La Junta, Colo. State Vice-President National S. C. Buff Orpington Club.

FOR SALE—RHODE ISLAND RED AND White Leghorn cockerels and pullets from the finest bred-to-lay matings in all the world. Not exhibition quality or color specials but birds bred from 235 to 250-egg birds. These birds will raise the egg-producing qualities of any flock 50%. A trio will raise a flock of living egg machines. Select birds weighing 1½ to 2½ pounds, $2 each. No star boarders, but producers. Money refunded if birds are returned. The Golden Egg Farm, Salina, Kansas.

BEE SUPPLIES AND HONEY

BEE SUPPLIES OF BEST QUALITY. SEND for 68-page illustrated catalog. We also sell Comb and Extracted Honey. The Colorado Honey Producers' Association, Denver.

MISCELLANEOUS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

SWEET CLOVER, "UPLAND ALFALFA," Dairyman's gold mine. Permanent pasture. Grows with wheat, rye, oats. J. Lewis, Madison, Kans.

FARMERS AND STOCKMEN—IF TROUBLED with Loco Weed, you can kill it with our Loco Killer without chopping or digging. Also want men to handle territory. If interested, write Western Mfg. & Trading Co., 1543 Glenarm, Denver, Colo.

WANTED—WOMAN WITH THREE CHILDREN wants position as housekeeper on ranch. Children's ages are 9, 12 and 15. Boy 15 can work around the place outside of school hours. All we want is our board, but place must be near school so children can walk, or a way provided for them to go. Don't mind keeping house for men if place is respectable and all right to take a little girl to. In answering please give address. N. B. F., care Western Farm Life.

HELP WANTED

MAN TO WEAR FINE SUIT—ACT AS AGENT. Big pay, easy work. Banner Tailoring Co., Dept. 699, Chicago.

WANTED—MEN, WOMEN, 18 OR OVER, GOVernment jobs; $100 month. Big opportunity for farmers. War necessitates hundreds appointments. Easy work. Write immediately for list positions. Franklin Institute, Dept. G 177, Rochester, N. Y.

SALESMEN WANTED—OWING TO DRAFT and enlistment, we have a few well-worked territories open, and will be pleased to hear from interested persons. Applicant must be exempt from draft. McConnon & Co., Dept. R, Winona, Minn.

WANTED—EXPERIENCED AND SUCCESSFUL man and wife to take charge as operating partners in a fine dry ranch in the so-called rainbelt of Eastern Colorado; 2,000 acres owned, 1,000 acres leased and more available to lease; 350 acres broken, 80 acres bottom suitable for alfalfa, some already started. Over one mile of living water, 140 head cattle (part belonging to widow of late partner). Place well suited for dairy and beef raising; 30 head milch cows; best buildings in Lincoln county, all new and up-to-date; partial set of implements, including tractor; prefer partner who can furnish all work stock, all labor and balance of implements necessary; but will be glad to hear from others; will make liberal terms to first-class, progressive, up-to-date man. R. D. George, Boulder, Colo.

LUMBER

LUMBER, MILLWORK, POSTS, DIRECT FROM mill, wholesale prices; send for carpenter's list for quick, freight prepaid estimate; millwork catalogs free. Keystone Lumber Co., Tacoma, Wash.

KODAKS

KODAKS, CAMERAS, PHOTO SUPPLIES—Fords, the best kodak store, 1029 16th St., opp. old P. O., Denver, Colo., for Eastman Kodaks, all makes cameras, films, photo supplies; develop any size roll films, 10c; print pictures, 3c each and up; mail orders solicited; kodak and camera catalog mailed free upon request. Mention this paper.

PATENTS

WE BUY AND SELL PATENTS. INTERNAtional Pat. Co., 583 Brandeis, Omaha, Nebr.

American Royal in October

The annual American Royal Live Stock Show at Kansas City this year will be held October 1 to 6, inclusive. This year's show will be purely a show of the four great registered beef breeds, which will be more strongly represented than in any previous year. On account of the prevailing high prices, unusual interest is taken in the raising of beef cattle, and herds of the four leading beef breeds of America, namely, Herefords, Shorthorns, Aberdeen-Angus and Galloways, will be represented at the American Royal this year from all quarters of the United States. On account of inadequate space at Convention Hall, this year's show will be held at Electric park, the week following Old Glory Week celebration at the park, which closes Saturday, September 29. It is expected that thousands of visitors in the city for Old Glory Week will remain over for the American Royal, to see one of the finest registered breeding cattle shows to be held in the United States this season.

Selective Plant Breeding For Drouth Resistance

(Continued from page 14)

many as 480 root hairs to each one-hundredth of an inch of root fiber, one-seventeenth of an inch in diameter, and since there are only about 100 to 150 soil granules to each linear inch there would seem to be more root hairs than there are granules. This rather upsets the theory of some eastern agriculturists who maintain that dry farming is impossible unless the ground is packed to bring the moisture up to the surface, which in our dry soils cannot be accomplished anyway, owing to the absence most of the time of free water.

We should have not only a dry farming college where all these subjects could be properly threshed out, but also a plant breeding establishment for the propagation of drouth-resistant varieties. Something might be done in this direction if our statesmen and business men could be brought to realize that in Colorado alone there are about 20,000,000 acres which can be dry farmed, and the income from this at $10 an acre would bring in two hundred million a year. We take great pride in landing a factory once in a while for Denver, but what does it amount to compared to an industry of this magnitude which could feed half the United States and support easily two hundred thousand families. This is our last big stake, why not go after it?

Attention Western Farmers and Dairymen

Acclimated Holsteins and Percherons

WHICH WILL BE YOUR CHOICE?

Buy your Holsteins and Percheron Horses AT HOME. Colorado Acclimated.

or send East and get stock that you will have to acclimate before they do you any good, and in most cases pay a great deal more money for them in the end?

Write us today—get our prices and guarantees.

THE JAROSA RANCH

HOWARD M. JAY, Owner
R. F. D. No. 2. Box 71
LONGMONT, COLO.

Breeders of Holstein Cattle, Registered and Grades
Registered Percheron and Belgian Stallions and Mares

Denver The Live Stock Market

Denver is the Highest Market **Most of the Time** and the Best Market **All the Time** for Western Cattle and Sheep.

Time and again cattle have sold on the Denver market for higher prices than the same cattle would bring same days at the Missouri River.

Why don't you market your cattle and sheep at Denver, where they will bring you greatest net returns?

REGISTERED HOGS OF LARGE TYPE

Boar and sow pigs with both size and quality. Our pure-bred swine have made prominent winnings every year in competition with prominent herds of the middle west.

Our Duroc-Jersey pigs are mostly sired by Orion Cherry King Again, a son of the Grand Champion Boar of America who won last year at the National Swine Show over the Grand Champions from all the leading State Fairs. This boar is the large, stretchy kind, and has sired the best lot of pigs we have ever had farrowed at the College. We bred the Grand Champion Sow at Denver last year, selling her to the Colorado breeder who exhibited her.

Our Poland-China sire weighed 820 pounds as a senior yearling and has good width and ham. Pigs by him for sale.

Our Berkshires we can safely state, after seeing eastern herds, rank with the best. We won first on Get of Sire at Denver last January, with pigs sired by our herd boar.

COLORADO AGRICULTURAL COLLEGE

Animal Husbandry Department FORT COLLINS, COLORADO

HIGH CLASS JERSEYS AND DUROCS

I have a corking good yearling bull, out of a cow that has just qualified for Register of Merit; also a dandy November calf out of a R. M. cow. These are priced right. Can you use one of them?

Also some Duroc boars, March pigs, by a son of Grand Model, and out of a daughter of Model Critic. They are good, and priced at $50 each. Worth more money.

Above calves sired by the great Count Majesty

A. M. McCLENAHAN Greeley, Colorado

Percherons, Belgians, Shires One of the largest breeding herds in the world. I can spare 75 young registered mares in foal to herd sires weighing 2,300 and 2,400 pounds. Two, three, four and five-year-old stallions, ton and heavier; also yearlings. As a producer of the best specimens with size, substance and soundness, this herd has no superior.

FRED CHANDLER, ROUTE NO. 7, CHARITON, IOWA, JUST EAST OF OMAHA

BARGAINS Percherons, Belgians, Shire, Suffolk, Clyde, Hackney, Great Coach Stallions, $450 and up. Good Jacks. One, two and three years' time given purchasers.

R. I. LITTLE

Good Block Des Moines, Iowa

JACK MEN, LISTEN

I have the largest 6-year-old jack west of the Missouri River for sale. Other bargains in Mammoth jacks and jennets.

Inspection Invited Satisfaction Guaranteed

W. H. WHEELER, Garden City, Kan.

BLUE RIBBON HERD

DUROC JERSEY HOGS
Everything Registered
Stock for Sale

C. F. BURKE, Rocky Ford, Colo.

Sweet Clover Builds and Conserves Moisture

(Continued from page 5)

small harrow attached to the plow. Watch for weeds and keep these out of sight by cultivation. Sow end of May or beginning of June, or in other words sow when experience and judgment tell you your real steady growing weather has set in. Many will prefer, if ground is ready, to sow earlier. Undoubtedly good stands of clover can sometimes be gotten by sowing earlier. But by sowing as suggested above, we with a little extra work get rid of millions of weeds, thereby improving our land for future crops, and what is of supreme importance, are not likely to have any frost or a cold snap to interfere with the RAPID GROWTH of our young plants, as our moist soil will be warm and conditions should be ideal for a splendid stand of clover minus weeds. Sow with a press wheel drill, six to ten pounds per acre of hulled seed.

We are not intending any hit-or-miss proposition, but have made up our minds to get as perfect a stand as possible; that is, a stand that will be free from weeds and thick enough so that our hay (if we make our crop into hay) is not coarse; and we must recollect that if used as pasture, stock prefer fine herbage to that which is coarse and woody.

Farmers Must Look Ahead

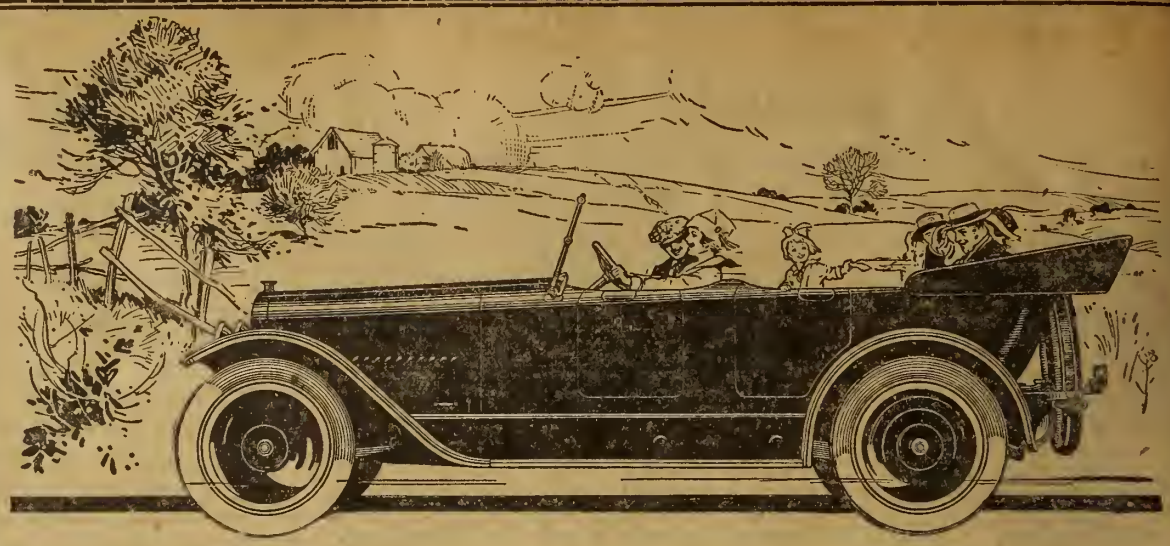
The beginning of this article spoke of farmers not looking ahead quite as much as they should sometimes. When we plan our work, if we plan as we should, we should ask ourselves the question as to what extent the growing crops improve or deteriorate our land. White sweet clover is and will be recognized as a wonder plant. Why? The second year it dies (it is a biennial), and leaves in the soil an immense amount of dead roots, organic matter which in time decays and becomes humus. This humus improves our land in many ways. It changes the texture of heavy clay and gumbo soils, has a strong tendency to prevent such land baking, changes the texture of our light sandy soils and helps prevent drifting or blowing; helps keep moisture in the soil, thereby saving many a crop of fall wheat from dying thru lack of moisture.

Usually it is said when winter wheat is more or less dead in the spring it has winter killed, intimating cold weather killed it. An immense amount of winter wheat is killed thru the soil drying out, and the winter gets the blame. The humus of the dead roots of sweet clover prevents this, by helping to hold moisture in the soil.

The finest potatoes in the world can be raised on much of our semi-arid soils after white sweet clover. Dry seasons do not affect our crops so much when the land is used after sweet clover. In fact, I am afraid to eulogize this plant very much more, because it will be harder to make my readers believe what I have written, but having, I think, said firstly and secondly, will say thirdly that no one can go wrong by rotating his crops with white sweet clover. Neither need he worry about having to rotate as a hard and fast rule just so often and so on. Judgment must be used, inasmuch as in some favorable seasons a very large amount of roots will be made, followed by more or less dry seasons which will prevent rapid decomposition of plant roots. But when we consider how we improve our soil in so many ways with this nitrogenous plant, first cousin to alfalfa, that grows practically anywhere, where alfalfa will not grow, can be pastured (if common sense is used) without danger of bloat, pays for itself the first season and keeps on paying by improved crops long after it is dead, surely we should at least give the subject some consideration and study.

Experience With Alfalfa

When it was suggested some years ago that alfalfa could be raised by means of irrigation in a state not a thousand miles from Colorado the majority said, "impossible." Yet today alfalfa is producing magnificent crops in that state practically everywhere, with water. No one would be foolish enough to decry alfalfa, for alfalfa responds magnificently when water is used and is the irrigator's stand-by. I hereby assert without fear of contradiction that when we understand more about white sweet clover, how to properly prepare our land, when to sow (you cannot sow it anywhere and everywhere at such and such a fixed time), how to sow, amount of seed per acre suitable to individual conditions, that we have a plant that will solve many of our dry farming problems and will be the equal of alfalfa to the man who is farming with what moisture falls upon his land. Yes, I will go one step farther. I believe white sweet clover is a better plant to raise on a dry farm than alfalfa, because it will respond much more rapidly to adverse conditions than alfalfa will, and gives much quicker returns thru its special ability to adapt itself anywhere and everywhere. This plant is well worth the serious study of both the irrigator to prepare his land for maximum crops of alfalfa, and those who dry farm thru intensive methods of conservation of moisture.



Things You Don't See

In Other Cars—Scores of Them

Mitchell sales increased 160 per cent in the first six months of this fiscal year. Sales have more than trebled since we adopted our present standard of 100 per cent over-strength.

One great reason lies in our doubled margin of safety. We have made the Mitchell a lifetime car. Every vital part is built and tested for twice the needed strength. Now half the world over men are learning how the Mitchell car endures. Most men who buy it, probably, will never wear it out. But that is only one of the many unique attractions.

31 Extra Features

The Mitchell has 31 costly features which nearly all cars omit. One of them is Bate shock-absorbing springs which never yet have broken. In beauty and luxury, it excels the average car in this class by at least 25 per cent.

It combines all the best attractions known to motor car designers. Before designing these new Mitchells our experts examined 257 show models, so that nothing would be missing.

Mitchell Sixes

TWO SIZES

Mitchell—a roomy 7-passenger Six, with 127-inch wheelbase and a highly developed 48-horsepower motor.

$1525

Four-Passenger Roadster, $1560. Sedan, $2240. Cabriolet, $1960. Coupe, $2060. Also Town Car and Limousine

Mitchell Junior—a 5-passenger Six on similar lines, with 120-inch wheelbase and a 40-horsepower motor. ¼-inch smaller bore.

$1250

All Prices f. o. b. Racine

How We Afford It

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Farming in Twin Falls Country

(Continued from page 6)

years. A backward spring which caused seed to rot in some cases and necessitated a second drilling, started the crop off wrong. The remainder of the growing season was very favorable, but hundreds of acres were caught by an early severe freeze-up. With conditions so disagreeable labor and hauling prices took an upward jump which added further handicap. And the dumping elevators were not all installed on time.

Ormby & Brown, a big sheep concern, are feeding a large drove of hogs on their ranch near Filer. Cholera which used to keep breeders awake at night has ceased to be a menace on the Twin Falls tract, owing to the hard, efficient licks put in against it by the U. S. Department of Agriculture, Bureau of Animal Industry, thru Dr. W. A. Sullivan, local inspector, and his assistants. Three years ago farmers were losing thousands of dollars annually by the disease. Now it is practically eradicated.

Sheep are highest in favor of any branch of live stock, take the country over, with dairy cattle probably coming next. The favoritism shown sheep obviously is due to the high prices of both wool and mtuton. The ovines take care of many a ton of bright alfalfa, bean and pea hulls, clover chaff and oats, and return a nice profit for the privilege. Range is available in the foothills and mountains both to the north and to the south, for big flocks. Many small flocks remain on the ranch the year round.

The cream from a separator will bring more money because it is uniform in richness and is sweeter because as it is separated while the milk is warm and fresh, it does not absorb odors as it would if left standing around.

It is sometimes easier to set a good example than to follow one.

Western Farm Life

Vol. XIX Denver, Colorado, October 1, 1917 Semi-Monthly

Waiting for the Races at Longmont Fair

Brock & Fisher Press Co.

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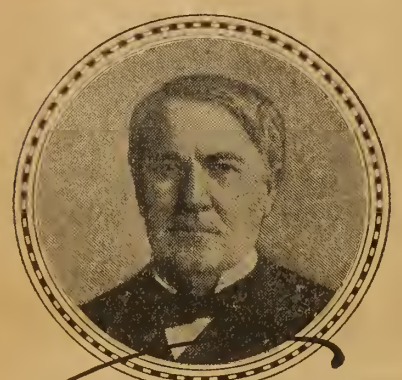

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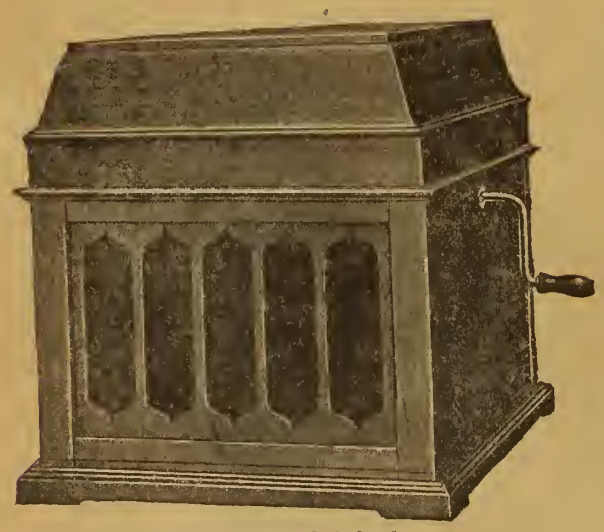

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MODEL 50

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A Western Magazine for Western Farmers and Stockmen

Comprising Ranch and Range, Farmers Life and Fruit Journal, Trans-Mo. Farmer and Ranchman

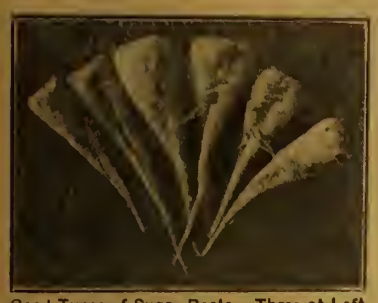
Largest Circulation of Any Farm Magazine in the West

Volume XIX | DENVER, COLORADO, OCTOBER 1, 1917 | Number 19

Lessons In Agriculture Learned at the Longmont Fair

BOULDER COUNTY DEVELOPS EDUCATIONAL IDEA IN EXHIBITS

ALVIN T. STEINEL



Good Types of Sugar Beets. Three at Left Most Desirable
(Photos loaned by Great Western Sugar Co.)

WHEAT, sugar beets, alfalfa, fruits, honey, pure-bred draft horses, dairy and beef cattle are the dominating features of agriculture in Boulder county, Colorado. Anyone visiting the fair at Longmont could readily see this. It was also apparent to the visitor that the fair management expected farmers to get something for their gate money besides dust and entertainment. Education has been the keynote of the Boulder county fair for several years, and 1917 saw former efforts eclipsed. Attendance figures indicated that the management is making no mistake in sticking to the "old-fashioned fair," instead of falling for the modern plan of sacrificing everything to the entertainment idea.

And when I use the term "old-fashioned fair," do not get a mistaken impression about the event at Longmont. It is old-fashioned only in the sense that the main feature is an exhibition of farm products. The form and manner of this exhibition is so thoroly modern that any farmer with an eye to his own advancement can pick up, in the course of a few hours, information about his own agricultural problems that, when applied, will be worth many dollars. There ought to be more fairs modeled after the Boulder county exposition. Other communities could learn, by sending delegations of farmers to Longmont next fall, to see the fair and to consult with the management as to the educational features.

No one in just passing thru Agricultural hall can get more than a confused idea of the exhibits. Too many people carry that impression away with them. The remedy for this lies in educating the spectator to get the best out of the displays. A notebook and a little time are all that is required. The story of the exhibits can be readily learned from placards prominently displayed. One of the big things this year was the comparative exhibit of Marquis and Defiance wheats, the full particulars regarding which are given in a separate article in this issue.

Emphasis Laid on Pure Seed

Wheat was one of the strong points this year. Emphasis was laid on the necessity or pure seed. Heads were on display from a certain locality in the county where there are many fields of mixed wheat. One in particular of which I made note made this showing: In a field of so-called Turkey Red a sample was taken which, on examination, proved to be 49.4 per cent of that variety, 48.1 of Velvet Chaff and 2.5 per cent unknown; in fact, less than half the wheat in that field was of the variety the farmer THOT he was sowing. Naturally the Boulder county wheat grower who saw this exhibit made a mental note of the locality, and when he buys seed he will get it somewhere else. Another sheaf was shown of supposedly Marquis which turned out to be composed of Marquis, Turkey Red and Bluestem.

Down the line a little farther was a sample of oats that had not been treated for smut, showing a loss of 14 per cent in the crop because of this neglect.

In the booth of the Great Western Sugar company I saw an exhibit of beets that looked like dried up parsnips pulled in December. Not a fancy sugar beet—no, but an object lesson in what happens to beets when they get too much irrigation water. Here was loss of precious water, total absence of sugar, and beets not even fit for feed.

"Million Dollar" Variety

Then, returning to the wheat section, there were some fine heads of a variety known in the Lafayette neighborhood as "Million Dollar" wheat. The farmers around there thot they had something out of the ordinary. What did the fair tell them? Simply that what has been locally known as Million Dollar wheat is our old friend Defiance under a local name. A good wheat, so why not stick to the old name? After this there will be no more Million Dollar wheat, because the farmers have learned the advantage of sticking to a proven variety by its right name. They have found out at the mill that wheat isn't always wheat—sometimes it is a mixture of several grains, or several varieties of a grain. The fair is helping Boulder county growers to realize the necessity for purifying wheat at its source. "What you put in the ground is what comes up." So they are beginning with the seed.

Turkey Red is the standby as a winter wheat, both on dry and irrigated land, but it lodges badly when watered. The farmers are looking around for a variety that has a stronger straw when its growth is forced by water.

They were much interested in the sheaf of Kanred—a new variety developed by the Kansas state experiment station and exhibited for the first time outside of that state. The chief advantage of this over Turkey Red is said to be its higher yielding and quicker maturing qualities, as shown by a six-year test at Manhattan, as follows:

	1911	1912	1913	1914	1915	1916
Kanred, bushels	35.6	19.6	37.1	35.2	26	33.1
Turkey Red, bushels	31.1	13.2	33.6	36.1	23	22.2
Difference, bushels	4.5	6.4	3.5	1.1	3	10.9

Kanred probably will be tried out in Colorado, both under dry farming and irrigated conditions, to determine whether it has the same advantages over Turkey Red here as it does at Manhattan, where it is grown under a rainfall of about 31 inches.

Sugar Beets the Foundation

Sugar beets are the foundation of prosperity in the Longmont district. Some people may dispute that statement, but the truth of it becomes apparent on investigation. It is the sugar beet that has brot crop rotation and fertilization thru the use of manure. It was the attraction of a cash crop that first made beets popular, and in spite of occasional violent differences of opinion between the factory and the grower regarding prices, beets have continued to hold their place in acreage, while tonnage and sugar content are advancing in proportion to the growth of crop knowledge. Money alone considered, there is no big profit in beets, but without the sugar industry in Northern Colorado that district would never have reached its present wonderful development, with high crop yields, enhancing fertility of lands and big returns from fattening steers and lambs. Therefore, the sugar beet exhibits are always interesting and, at Longmont, decidedly instructive. This year's display was no exception to the rule, tho there were not as many exhibitors in the beet division as last year. There is something definite in mind in the shape, size and sugar quality of the beets that are shown. They are scored at Longmont just like a whiteface or a shorthorn is scored on points, and after the scoring the growers can examine the beets and see how near the ideal they are coming in their own fields. Sugar content is running high this fall, according to analyses made of the exhibit beets.

The story of rotation was exemplified. There a row of mediocre sugar beets showing the third consecutive crop without a rotation and averaging 15.7 tons per acre, and here a row from a farm where rotation is practiced, the rotation being wheat, alfalfa, corn and beets, and the average of the beet crops being 17.7 tons. Another display showed beets from a seventh consecutive crop without fertilizer with an average of 15.7 tons, and beets from seven fertilized crops averaging 19 tons per acre. Barnyard manure is the only fertilizer needed, in addition to legumes—sometimes sugar peas, but mostly alfalfa.

Interesting Soils Exhibit

The Great Western Sugar company provided an interesting soils exhibit, where a lecturer was constantly on duty to explain the mysteries of the glass tubes filled with soil of various types. The water-holding capacity of soils was shown in a most graphic way. Here was the light sandy soil quickly absorbing and as quickly letting go of its moisture, the sandy loam soil doing a little better, and then the soil that was well fertilized with manure to increase its water-holding capacity. Plants were shown in the very act of using moisture and diffusing it thru transpiration. This was a popular booth, where many a farmer got a lesson that was worth the money he paid at the gate.

The Longmont Farmers' union exhibited a cabinet, such as will be placed in all the rural schools in that vicinity by the union this fall and winter. This cabinet contains a display that teaches pupils of the rural schools to distinguish the varieties of wheat grown on the farms of the county; that shows the grading of these wheats by actual samples of each grade, and keeps constantly before the pupils the fact that 70 per cent of wheat is flour, 13 per cent is bran and 17 per cent shorts; that bread is composed of 60 per cent flour and approximately 40 per cent water; that 25 cents per hundred pounds of flour is a fair estimate of the cost of manufacturing flour, in addition to the cost of the wheat; that one pound of wheat makes flour enough for a pound loaf of bread, and six pounds of wheat is the annual per capita consumption of the United States. That is the way the Farmers' union is aiding in educating the younger generation of farmers.

And, speaking of the younger generation, it was well represented—from the very youngest in the baby show to the more mature members of the

Turn to Page 14

Typical Heads of Turkey Red Wheat Exhibited at the Longmont Fair. This is the Principal Variety of Winter Wheat for Both Irrigated and Dry Land

Forty Farmers In a Spring Wheat Variety Test

MERITS OF MARQUIS AND DEFIANCE TO BE DETERMINED ON FARMS

THAT farmers can carry on their own experimental work under actual field conditions and get results that are really more convincing than those usually achieved on experimental plots was well illustrated at the Boulder county fair in Longmont by the test of the relative merits of Marquis and Defiance, two spring wheat varieties that are running neck and neck for first place in the favor of irrigation farmers. Twenty growers of Defiance and twenty growers of Marquis started out last spring with the purpose of showing themselves and others whether the claims made for their respective varieties could be backed up by field experience. At the recent fair the first showing of results was made, and it is only a beginning, for the test is to be kept up for five seasons, so that every type of climatic condition to which Northern Colorado is subject will have opportunity to react upon the test crops.

The work is being done under the direction of County Agriculturist H. H. Simpson and the fair is being used as the school, at which all wheat growers attending may see for themselves how the test is working out. Naturally, there was intense interest in this demonstration, which had been well advertised over the county.

One thing was made plain to those who took part in the test, namely, that the fields should be given just such attention as a good crop of wheat deserved, and no more, and that results must be reported with absolute accuracy. There are no prizes at stake; it is simply a question of which of the two wheats best fits the conditions of Boulder county, and it is to the interest of every farmer participating, as well as to the interest of his fellow farmers in the entire section, to get at the truth.

Here are the facts about the first season's test that any farmer could learn from looking at exhibits and reading placards in Agricultural hall:

Defiance is a soft, smooth head spring wheat, improved at the Colorado Agricultural college by Professor Blount; it is a hybrid, and one of the heaviest producing wheats. A little slow in maturing, but good, one year with another.

Marquis is a spring wheat introduced from Canada. Smooth head, strong straw, plump berry and semi-hard; ten days to two weeks earlier in maturing than Defiance. A good, heavy yielding wheat for this locality.

These are the respective claims made for the two varieties. Now as to results of the test for 1917: At the time of the fair the threshing was not finished and official yields were not available. However, Defiance outyielded Marquis from five to ten bushels per acre, according to unofficial reports.

The average time of maturity of the twenty fields of Defiance was 145.1 days.

The average time of maturity for the twenty fields of Marquis was 135.5 days, the difference in favor of the latter being 9.6 days, which is virtually up to the claims made for the quicker maturing quality of the Canadian variety.

The average amount of seed used on the twenty fields of Defiance was 62.6 pounds.

The average amount of seed used on the twenty fields of Marquis was 72 pounds. This is a difference of 9.4 pounds of seed in favor of the Colorado variety.

The fields varied in size from ten to forty acres.

The following statement is made by County Agriculturist Simpson regarding the relative merits of the two varieties of wheat:

"Regarding the yield of Marquis and Defiance wheat, the experience of growers here is practically as you were told; that is, Defiance usually yields five to ten bushels more. I have gathered data from a great many fields of both varieties and the Defiance, if good, yields forty to sixty bushels; Marquis, thirty to fifty bushels. The best yield of Marquis in this neighborhood was fifty-five bushels. Regardless of this fact, growers are turning to Marquis, mostly because of the experience two years ago during the rainy season. Defiance rusted badly, while Marquis matured early and was very slightly affected.

"I introduced Marquis here the first year I was agent here, in 1914, giving away some seed which I secured from the San Luis valley. Both varieties have good qualities. The Defiance is our heaviest yielding spring wheat, but is soft and goes down badly and rusts if the season is wet, while Marquis is of much better quality, matures early, stands up better, etc. Wheat growers in the Mead section grow a great deal of Defiance, but very little is grown this year within a radius of five miles of Longmont, all having changed to Marquis in the last two years. Our farm bureau is not endeavoring to replace Defiance with Marquis, for we are not yet in position to say which variety will give the biggest returns."

A more complete report on this year's results will be made in a subsequent issue, and the course of the test will be followed from season to season in order to give all wheat growers the benefit of the work being done by the forty progressive Boulder county farmers, whose names follow:

Defiance growers: W. H. Ballinger, W. D. Orton, Elmer Johnson, Harry Locke, Archie Logan, Gabe Lucas, D. J. Lucas, Albert Lund, William Maxwell, F. W. Muhme, Henry Muhme, Owen Oard, William Shannon, Harry Yager, W. H. Akers, F. and W. Benjamin, Will Furney, Guy Harmon, August Johnson and Bob Wilson.

Marquis growers: W. H. Akers, Dick Beasley, Tom Beasley, Sanford D. Buster, Vinton O. Coffin, John Dawson, Charles Gregg, William Hanson, C. L. Hover, Elmer Johnson, J. N. C. Jones, Arthur Nelson, A. F. Peters, G. F. Rebman, Art B. Sawdy, Frank M. Smith, Emmett Taylor, Clarence Townley, Robert Townley and Mrs. J. H. Williams.

Wyoming Man Writes About Minnesota State Fair

LIVESTOCK COMPARISON FAVORABLE TO MOUNTAIN STATES

T. S. PARSONS

Prof. T. S. Parsons, the agronomist of the Wyoming State university, has been granted a year's leave of absence for the purpose of doing some work at the Minnesota state experiment station. Having acted as judge at the Wyoming state fair for seven years, and being thoroly familiar with mountain livestock conditions, he was asked to give the readers of Western Farm Life his impressions of the Minnesota state fair, which he has done in the article that follows.—Editor.

AFTER serving for seven successive years as judge at the Wyoming state fair, it was certainly refreshing to attend the Minnesota state fair this year in the capacity of a mere spectator. Altho the Wyoming fair is a hummer and up to date in every respect, it is small compared to the older state fair of Minnesota, which is said to be the largest state fair in the country, and the only one that is run at a profit.

The Minnesota state fair this year was run on a grander scale than ever and was, in every sense of the word, a mammoth food conservation training camp. All the exhibits and demonstrations were along the line of preparedness and food conservation. Improved farm machinery, better grains and seeds, and better methods of cooking, canning and drying were in evidence on every hand. The Minnesota Agricultural college and experiment station gave demonstrations and exhibits along many different lines. The domestic science and home economics exhibits and demonstrations were especially strong.

To the man who has spent several years in the west, and who has become more or less familiar with the livestock on the range, the livestock exhibit was especially interesting. The livestock exhibit this year was especially good and nearly all lines were represented. There was a marked difference between the stock seen here and the Wyoming bred stock usually seen at the Wyoming State Fairs. The comparison, however, was far from unfavorable to the Wyoming stock.

The western man is at once impressed on looking at these animals, no matter whether horses or cattle, with their fine-bred appearance, extreme smoothness and general hothouse appearance, that comes as a result of the intensive feeding and care which they receive. One is at once struck with that lack of ruggedness and strong, sturdy growth which is so evident in all Wyoming grown stock, especially the young animals.

King Bros. in Evidence.

The difference in the sheep and swine was not so marked, as one naturally expects to see better hogs in a corn state. The King Bros. flock of Rambouillets was very much in evidence, however, as was shown by the large number of blue ribbons hanging about the pens. There is nothing like the grasses and alfalfa of the mountain states to build up young growing animals. The Gammon herd of Percherons up in Wyoming has many individuals that have been raised on pasture and alfalfa hay alone that are equal to anything in the horse line seen at the Minnesota fair.

The horse show of course was great, some of the best horses in the country being on exhibition. Some of the drivers were exceptionally fine, and the great amphitheater was crowded every day and evening with interested spectators.

All the breeds of draft horses were represented by herds from Minnesota, Wisconsin, Missouri and Iowa. The Finch Stock Farms of Moorhead, Minn., had one of the best exhibits, showing Percherons, Belgians and Shires. The Havermore Percherons of Moville, Iowa, also made a good showing. The Wisconsin Bred Shires from Marshfield were fine, as also were LeFebure's Belgians from Fairfax, Iowa. The Hurdcroft Farms of Monticello, Minn., also made a very good display of Percherons. As already stated, these horses all showed the finest points in breeding and care, but lacked the ranginess and the generally strong, robust appearance of the western bred animals. The pony classes were very noticeable by their absence, only a few Shetlands being shown. The standard bred trotters and saddle horses were well represented by many fine individuals.

Many Good Dairy Herds.

Practically all of the breeds of beef and dairy cattle were represented by herds from Minnesota and surrounding states. Brown Bros. of Hartford, S. D., had a fine herd of Holsteins, as also did the Willow Ridge Farms of Withro, Minn., and Rogers, Helmers & Co. of Stillwater.

Several herds of milking Shorthorns were shown along with several herds of Red Polls, Aberdeen Angus and Herefords. The Fernbelt Farms of Ladysmith, Wis., had a fine herd of Ayreshires on exhibition, illustrating what can be done with dairy stock on the cut-over lands of Northern Wisconsin. The Jean Duluth Farms showed a fine herd of Guernseys, and the Burn Brae herd of Jerseys showed by Charles Peterson of Rosenda, Wis., were perhaps fine as any of that breed on exhibition.

The Boys' Pig club exhibit was interesting and instructive. Many of the champion pigs from the various counties of the state were shown. Over seven hundred boys are enrolled in the Pig Club work in Minnesota this year, and they are showing the farmers some things about hog raising. The main swine exhibit also was very good. One of the sows on exhibition sold for $1,000.

The sheep exhibits were mostly by local sheepmen of Minnesota. The Walnut Hall Flock of Hampshires from Kentucky and the King Bros. Rambouillets from Wyoming being about the only outside flocks on exhibition.

The military display at the fair this year was of course a prominent feature. A regiment of State Militia was encamped on the grounds, and on several afternoons five to six thousand soldiers marched in review. It was certainly a sight to arouse patriotism. In the evenings fireworks displays representing modern warfare were given.

A Lesson In Rural Credits

There are still some uninformed individuals who scoff at the rural credits law. For their benefit let us call attention to a loan granted recently in the Greeley district, mention of which was made in our issue of September 1st. Mr. W. D. Kay of Eaton, Colo., got $9,000 thru the Wichita Farm Land bank, the loan runniug 36 years at the fixed rate of 5 per cent. He took up with this federal farm loan money a loan on the farm on which he was paying 7 per cent. The transaction, in the first place, saves him interest charges of $180 a year, and while that would be inducement enough, it is by no means all. Here is the advantage that appealed most forcibly to him: by adding 1 per cent to the interest and paying annually 6 per cent, he not only takes care of the interest charge, but will, in the 36-year period, if he chooses to let the loan run full time, wipe out the principal also.

Under his old loan he could pay 7 per cent annually for 36 years and still owe the $9,000. And yet some say the federal farm loan law is not of benefit to the farmer!

Sweet Clover Question

Lots of men want alfalfa seed, but it is 50c here, so beyond our reach—Subscriber, Cahone, Colo.

Your question concerning poultry will be answered on our poultry page.

Regarding alfalfa, if the seed is too high for you, I would suggest you try sweet clover. The latter is a drouth-resistant plant which as a soil renovator is equally as good as alfalfa, and will thrive in some localities where alfalfa cannot be grown. There will be a series of articles starting in the issue of September 1st by Dr. V. T. Cooke on the subject of sweet clover from which you can obtain further information.

How Sweet Clover Solves Soil Blowing Problem

SANDY LANDS REDEEMED BY A LEGUMINOUS HAY CROP

I have read your articles about sweet clover and would like a little more information about it for dry farming. I have a very sandy soil over most of my farm and it blows badly in spring and sometimes all winter. My idea was that if I ever got a good stand of alfalfa in rows and cultivated it properly I could count on good hay and sometimes a seed crop. I tried to get a stand of alfalfa on a five-acre field several years ago, but it was choked out by the weeds. I cut the field to make hay of it, thinking that after the weeds were gone the alfalfa would do better, but it gradually dried out and died in the fall and there were no signs the next spring of anything hardly but weeds, so I plowed the field up.

From what I have read in the articles by Dr. Cooke I think I can see how sweet clover will help get this sandy land in beter shape to hold moisture. Stuff comes up fine in it when we have a normal season, but when there is a drouth I can't make a crop. I have read a lot about storing moisture in the soil, but I can't get any stored in this kind of soil, because if I plow in the fall the winds move the plowed ground clear off the place before spring. The only way I can do is to spring plow, shallow, get my crops in early and then trust to the weather to bring them thru.

Maybe I got the wrong impression from reading the sweet clover articles, but if so, please set me right. What I want to know is, will sweet clover make sandy soil any better for holding moisture? If so, how can I handle my place so that I can gradually improve the light soil, of which I've got over a hundred acres, with some additional that is heavier. How much of this at a time would it pay me to put in sweet clover and what kind of a rotation would you suggest for me?

Our rainfall here in Lincoln county is about 16 inches on the average. Some years it will go 20 and some down to 12. I need lots of roughness, because I run a bunch of 20 cows and sell cream. Besides the cows I always aim to grow some wheat and the last two years have had fair luck with pinto beans. I want to improve the whole place. My cows don't furnish near enough manure and I either will have to get something to make this soil stop blowing or give up the farm. It is getting worse instead of better. Any help you can give me will be appreciated. I will follow directions if you can lay out a practical plan for me. I hear lots of talks on farming, but nobody seems to get right down to brass tacks in regard to my conditions. All of them have snatches of something good; sometimes it is about the silo and at other times about selecting cows, etc., but what I want is somebody to tell me or show me what to do to keep my farm from blowing away. This sounds like asking a lot, but we never get anything in this world unless we ask for it, so I come to you because the articles in your paper are mostly practical and I can see they are written by men who have farmed.—L. P. L., Limon, Colo.

The above was submitted to Dr. Vernon T. Cooke, author of the series on Sweet Clover, and his reply is given in full, as it will be helpful to others on "blow land."

Dr. Vernon T. Cooke

Most sandy soils are devoid, to a large extent, of humus, which is derived from the decomposition of dead roots and that which ordinarily and generally is turned under the soil when we plow. Most of our soils in the semi-arid regions are naturally very short of humus. Our growing crops use some, and also, on account of our climatic conditions and large proportion of sunshine, more is lost. We use or lose much when we are raising crops which need cultivation thru such cultivation; hence, unless we return organic matter to the soil, our soils, especially sandy soils, become very much lighter in texture and will thereby become most susceptible to any action of the wind—in other words, will necessarily drift or be blown away to some other land.

If you are, as I take you to be, a progressive farmer, you should realize that it pays to make haste slowly, provided, of course, you can attain those results you are after. I would suggest that you sow with a press wheel drill forty pounds of winter rye per acre any time now, and then fifteen pounds of unhulled white sweet clover, broadcasted by a machine, so as to get seed as evenly distributed as possible. White sweet clover to be sown the opposite way to which the rye was sown. After the above is done, before any growth is made, if possible, have some stock in the field to tramp the seed in.

Your rye will most likely grow first and will hold the snow, and should help, up to a certain period, prevent some evaporation, thereby conserving moisture for the clover to get a fair start.

The above is for old ground. Don't plow it. If the following season is very favorable, you may get some hay or pasture—don't pasture too closely. If dry, let the rye ripen and go to seed and figure on the second season giving you a crop, as well as putting a large amount of organic matter in the soil. It would probably pay you best the first season not to expect anything from the crop, because the thing to do is to get as rank a growth of both rye and clover as possible, but as we can not tell what the season will be, judgment must be used by you as to what is best. Your soil the second season will undoubtedly have considerable organic matter in it, and (white sweet clover the second season puts as much as twenty to thirty tons of dead roots in the soil) if you plow all surface vegetation under your soil should not drift or blow. Plow when soil (sandy soil) is pretty moist and not too deep. Harrow as soon after a big rain as possible. Don't wait for surface soil to dry out. You can safely harrow when soil does not stick or clog the harrow teeth.

The above procedure will prevent your soil blowing and will make it so that it will retain and hold moisture. Furthermore, you can depend upon raising maximum crops with the minimum amount of moisture if you follow out the above.

If you prefer, you could sow winter rye in the spring and drill in eight or ten pounds of hulled white sweet clover on plowed ground, but you are more likely to make a success if you sow on old ground, either in the fall or early in the spring, without plowing. Don't worry about weeds—they will help one way.

As to rotation, learn to put in some of your land every year as above and so make it retentive of moisture thru the organic matter. You can then raise those crops which your judgment tells you will pay best.

To get a good stand of alfalfa—and you don't want any other on land such as you describe—is not so easy as it first appears, but, believe me, it can be done.

White sweet clover has the same bacteria on its roots as alfalfa and is an ideal plant to prepare our land on which we want to raise alfalfa, and I would strongly recommend you not to sow alfalfa till you have followed out the above suggestions in putting more organic matter in your soil. 'Tis true, you seemingly are losing time, but, in fact, you are not, because you should get a perfect stand of alfalfa, which means a larger tonnage of hay per acre, as well as knowing that your efforts of getting alfalfa to grow are not likely to be thrown away, as well as loss of valuable time and seed. A good growth of rye and clover the first season would most likely allow you to sow alfalfa the following year.

Your letter interests me very much, because I am dogmatic enough to make the assertion that it is not a question as to whether we will or will not return organic matter to sandy soils, but we MUST—there are no "ifs" or "ands" about it. Necessity knows no law, and soils without humus don't hold as much moisture as those which do have it, and sandy soils with little or no humus in them will blow. It is only a question of time as to when we must return organic matter to our land to become humus. The variation of time depends on quality and texture of our land. Soils vary very much. That is easily understood if we will take notice of what natural vegetation grows thereon. Would not expect my ideas to be acceptable to everyone, but they are based on practice and are not theories, and should be worth the consideration of at least trying out, if only on a small scale.

Practicability of the Lister to Store Winter Snowfall

RIDGES FORM A SNOW TRAP AND BREAK THE FORCE OF THE WINDS

H. M. COTTRELL

A LARGE part of the moisture absorbed by the soil is lost by evaporation from the surface unless some means are taken to prevent this loss. The sun and winds carry off the moisture from the surface. As the surface soil dries, the moisture from the lower soil is lifted gradually upward, and, in its turn, is evaporated unless prevented.

Where the surface soil is stirred and kept loose to a depth of two to four inches, this evaporation is largely checked, the loose soil acting as a blanket, or mulch, to prevent the moisture in the soil below from escaping.

When a crust is formed, the surface is made compact and the soil moisture evaporated rapidly. In a field, after grain has been cut, the soil is hard on the surface and often moisture equal to one inch of rainfall is lost thru this hard surface every week during the hot weather. When a disk harrow follows the binder, the surface soil is loosened and a mulch is formed that checks this evaporation to a great extent.

It was once generally advised to cultivate or harrow the soil from early spring until fall after each rain, in order to keep a crust from forming and to keep the surface soil loose enough to form a mulch or blanket. This system has been found to be dangerous. The level surface and the fineness of the particles made by repeated harrowings made the soil easily moved by winds. Thousands of acres in the Southwest and tens of thousands of acres on the Pacific coast have had all the soil blown off as deeply as it was plowed because the surface soil had been kept too smooth and fine. In many cases the blowing did not stop when the depth of plowing had been reached, but kept on moving the raw, smooth sub-soil. The surface of cultivated dry land soil must be kept corrugated and rough.

The principle is the same as that governing the flowing of water in mountain streams. In the mountains of Colorado are trout streams so swift that a man cannot hold his arm perpendicular in the water. At the bottom of these streams fish may be seen lazily moving up stream. It seems wonderful that a fish can be so powerfully muscled that he can swim slowly

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(Photo by courtesy of Rock Island Lines.) HOLDING THE SNOW BY FALL LISTING ON HILLSIDES

The lister is used in the fall as if a field of corn was being planted, which leaves every alternate furrow unplowed, and the dirt being heaped up on these, leaves a series of high ridges which form a perfect snow trap and effectually break the cutting edge of the wind.—E. R. Parsons in issue of Sept. 1st.

Sudan Grass Again Does Well

SURPRISING RESULTS AT 6,000 FEET ALTITUDE

Sudan Grass 7 to 8 feet high on farm of J. B. Plato, Semper, Colo. (5,500 feet). This received irrigation and made a dense jungle of fine hay, which will be fed this fall to a herd of purebred Guernseys

SUDAN grass has again shown its adaptability to stand up under drouthy conditions during the past summer. This crop has also shown its ability to make a good yield in the higher altitudes. It seems to be the only one of the sorghum family to adapt itself easily to elevations of 6,000 to 6,500 feet. As with other "easy growing crops," Sudan grass is not getting a fair show. Because of its adaptability many farmers are letting it take care of itself. The result is disappointing to the farmer and in the end will prove the undoing of a valuable hay crop in the intermountain states, because the story will be spread around.

"Oh, Sudan grass isn't what it's cracked up to be. I've tried it three years now and didn't get enough hay to pay me. It was weedy and didn't get half as high as they say it does."

The farmer who talks like that, nine times out of ten, has failed to meet the fundamental demands of any crop in the way of seedbed preparation, rate of seeding, cultivation, etc. It has been the experience of farmers on non-irrigated land that light seeding, in rows 30 to 36 inches apart, and cultivation to conserve moisture and keep out weeds, will bring far better results than broadcasting or drilling in the seed closely with the intention of letting the weather take care of the crop. In a wet season the latter procedure might bring a greater tonnage, but quality is sacrificed, as the weeds are cut with the hay.

Read what Mr. G. F. Harrison, a farmer in Douglas county, Colorado, writes in the Farmer's Exchange Bulletin of that county, about his experience of the past two seasons with Sudan. He does not give his altitude, but there is very little of the area of Douglas county below 6,000 feet.

"Sudan grass is rapidly growing in favor in Douglas county. The past two seasons have been splendid tests of its staying properties thru our long drouths. It grows steadily while any moisture is left in the soil, then seems to be almost stationary, retaining its color; when moisture comes it shoots up rapidly, attaining a height of from seven to ten feet, last year producing a yield of about six tons per acre.

"This season with practically no moisture it is about six feet high. In ordinary years two crops can be harvested. The second cutting will grow to a height of five feet in three weeks.

"Stock of all kinds prefer it to any other feed and do well on it. While I do not believe like some that it is as good for milk cows as alfalfa, yet it is better for young stock, colts and work horses. Some claim that it is light and has very little feed value. The condition of my young stock last spring and also my work horses that were fed no other hay, has convinced me that, while there may be something in the criticism, it is certainly a valuable crop for the Colorado farmer to raise, as it is almost a sure crop and will grow on upland too poor for any other crop.

"I, at least, after two years' experience, intend to continue raising Sudan grass.

"I put it in with a corn planter, using kafir corn plates, which sows about two pounds to the acre. This I am convinced is better than sowing with a grain drill, as it is possible to cultivate, keep weeds out and retain moisture, besides the cost of seed is very much less and the yield greater. It can be cut with a corn binder with

Turn to Page 7

Before Deciding On Your Engine—

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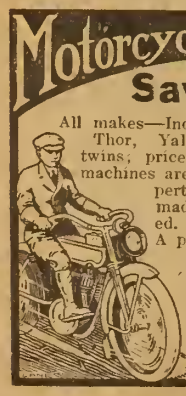

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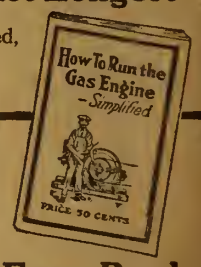

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Home Demonstration Agent

EL PASO COUNTY now has a county home demonstration agent, Miss Mary Collopy, a graduate of the Agricultural college, having recently been appointed to the position. The new appointee will devote all her time to helping the farm women of El Paso county with their household problems. She is equipped with an automobile and will spend most of her time in the field. Miss Collopy is well qualified for this important work, having demonstrated while in college an ability for leadership by taking a prominent part in all student activities. She is a daughter of Mr. and Mrs. T. J. Collopy, her father being one of the successful farmers of the Fort Collins district.

Miss Mary Collopy

Finishing the eighth grade in the rural schools of Larimer county, Miss Collopy entered the high school of Fort Collins, from which she was graduated in 1912. She then entered the Agricultural college and received her degree of bachelor of science in home economics in the spring of 1917, finishing with a very high record. While in college she did more than the required amount of practice teaching with a high degree of success, and for fourteen months was a successful teacher in the rural schools of Larimer county. During the summertime she has had entire management of the Collopy farm home. This summer Miss Collopy has been engaged in giving canning demonstrations in the campaign for better conservation of food which has been conducted all over the state by the Boys' and Girls' club organization of the Agricultural college. Her work in this line has been unusually successful and demonstrated an exceptional fitness for her new field of endeavor. —R. L. Crosman.

Sudan Grass Again Does Well

Continued from Page 6

absolutely no loss, as it stands straight and the binder will get every straw. It is fine to pasture green, the only objection being to it is danger of prussic acid, which forms when slightly frosted. While I have not experimented, I am told that this disappears after the first hard freeze and can be pastured then with safety.

"Why pay from $30 to $40 a ton for alfalfa and horse hay in the spring when you can raise from 4 to 6 tons of Sudan grass on your poorest upland? Try a small field, plant with corn planter, cultivate; keep weeds out. conserve moisture, and you will be pleased with the result."

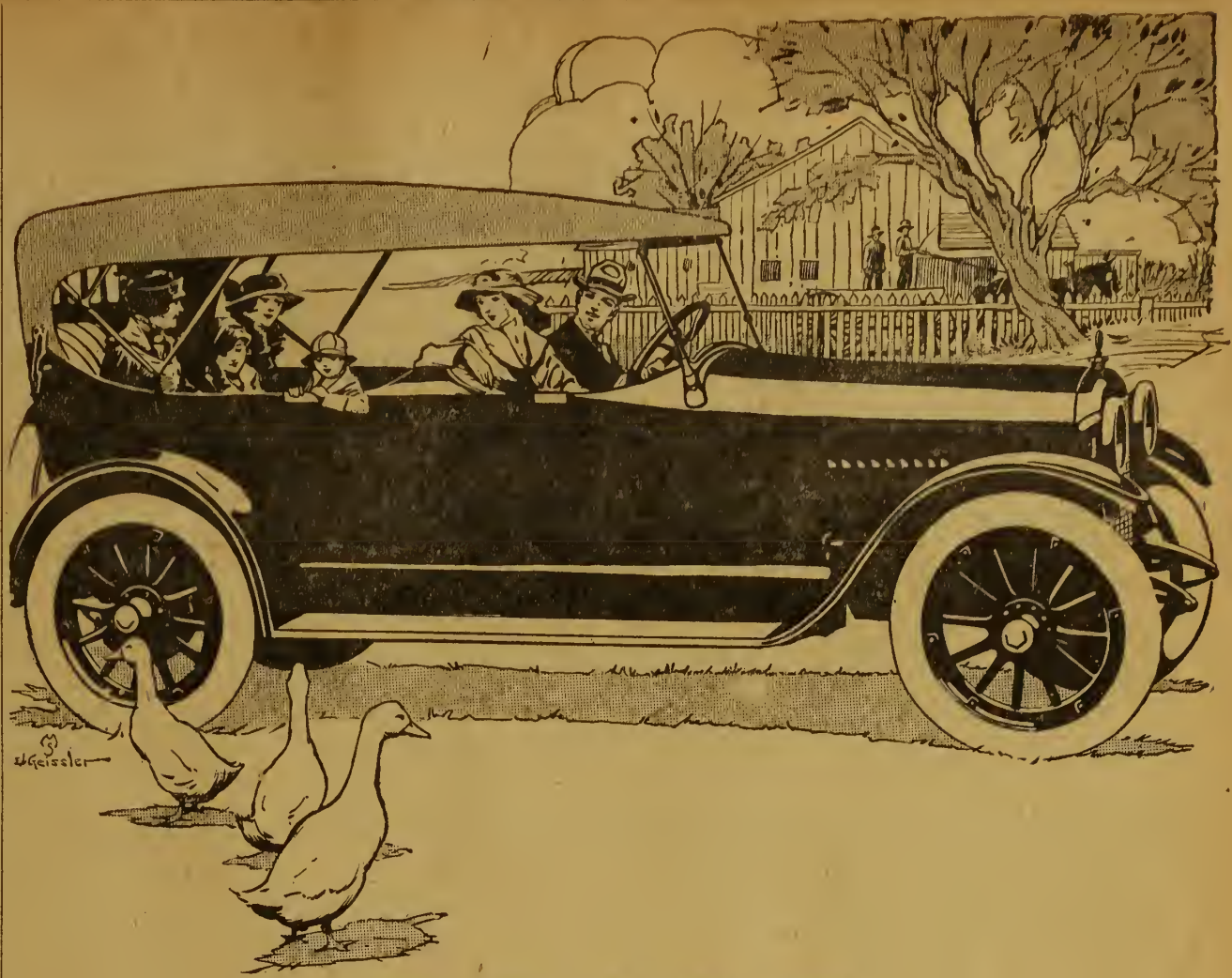
The feeding value of Sudan is about the same as that of timothy hay. It is much thinner stemmed and finer leafed than sorghum and consequently makes a better quality of hay, besides its advantage of heavier yield by reason of two cuttings when moisture conditions are favorable.

The crop shown in the accompanying cut was grown this year by J. B. Plato, a dairy farmer, at Semper, in Jefferson county, Colorado, at an altitude of 5,500 feet. This patch of one acre was irrigated, receiving water twice. It made a growth seven to eight feet tall and dense as a jungle, as it was broadcasted.

Cow Has Paralysis

I would like to get a little information in regard to my milk cow. She has been sick since May. At first she started to cripple from her front feet and could not put her head down at all to eat nor to drink after that. Seems like there is something wrong with her back. She cannot get up at all. She quit giving milk. She gave six gallons a day. She had a calf the last day of February. She has been eating lots and has a good appetite all the time she has been sick. Of course, we had to feed her lying down like she was. She has been down without getting up at all for over a month and cannot move by herself. Lately she does not seem to have an appetite nor won't drink.—L. M.

The cow evidently has paralysis originating from the brain and not from the spinal cord. There are many things that might have caused it, and I am not in possession of facts that would warrant even a guess as to the cause. Since she has been down so long and has lost her appetite, it will probably be better to destroy her, since the case is practically hopeless.—G. H. Glover.



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School of Agriculture

The Colorado School of Agriculture, located at Fort Collins, begins its eighth fall term October 9th. This is not a preparatory school, but a school organized for fitting young people for successful life in the country. For the young man there is practical instruction in agriculture and the mechanic arts, and for the young woman home making and all phases of domestic science, and such cultural studies for both young men and women as will be helpful in fitting them for good citizenship in rural communities.

The length of term is six months, and pupils of 15 years or over are admitted from the eighth grade of the public schools. Those who may desire further training, or who may wish to enter college at the end of three terms of this practical work, can do so by attending an additional term of six months.

Tuition is free and the fees charged are only such as cover the actual cost of supplies, etc., furnished by the college. Estimates of the cost, covering board, room, laundry, books, fees, military uniform, etc., for boys for the term of six months is $213.60; for girls, $208.

The School of Agriculture is part and parcel of the Agricultural college, its students having the same instructors as those employed for the college proper and having access to and the use of the college farm, its equipment and livestock. Prof. T. M. Netherton is principal of the school. He has served in that capacity since its organization and his constant endeavor has been to improve the course along lines that will fit graduates for the work of daily life as found in the country. While many enter the school directly from the eighth grade, there are others of more mature years who did not have opportunity earlier to gain a higher education. Morally the atmosphere at Fort Collins is all that could possibly be desired. Under the presidency of Dr. Charles A. Lory the Agricultural college has reached a standard of excellence that ranks it with the best institutions of its kind in America. Any boy or girl, no matter what his or her aim in life, can find at Fort Collins, either in the college proper or the school of agriculture, a training of character and intellect that can be nowhere surpassed.

✦ ✦ ✦

Topdress Wheat With Straw

Last season showed especially good results for topdressing wheat. The old experiment field of the University of Missouri College of Agriculture at Columbia had twenty-one plots in wheat with various treatments, and in early spring when most wheat looked dead and dried up those plots which had been topdressed with manure and straw started off vigorously, showing that they were not badly dried out, altho all the rest had been badly injured. When threshing time came the highest yield, 39.4 bushels per acre, was on a plot that had been topdressed with strawy manure and all of the topdressed plots yielded well. Missouri does not often experience so dry a winter as the last one, but spreading straw on wheat in early winter not only protects it from drying out, but also tends to prevent smothering by ice sheets. It keeps the snow from blowing off, and helps materially in returning fertility to the soil.

Any source of fertility is well worth considering at the present high prices of crops and fertilizers. A ton of straw contains 10 pounds of nitrogen, 1½ pounds of phosphorus and 18 pounds of potassium. At the present high cost of nitrogen and potassium in commercial fertilizers the nitrogen of a ton of straw is worth $2.50 and the potassium is worth $5, making the straw worth $7.50 a ton for fertilizer in addition to the small amount of phosphorus it contains. Of course straw has additional value in that it adds vegetable matter to the soil.

Until the last few years straw had to be spread by hand and the task was somewhat laborious, but recently machines have been put on the market for spreading straw rapidly and easily. The practice is gaining in popularity where the spreaders have been introduced.

Seven Tons of Hot Air

In these times of readjustment and a realignment of values, human and otherwise, citizens should give matters political deeper thot than ordinarily. This country has needed just such an awakening of the sleeping national conscience as that which it is undergoing. Drastic as the dose may be, we shall be compelled to swallow it. We dare not forget that the war is on.

Incidentally let us see to the political housecleaning that the nation needs. There are many abuses demanding correction. Seven tons of mail matter are franked by Congress every day just now thru the Washington postoffice. This is not departmental material or informative matter needed by the public, but, in great part, personal boosts for members of Congress which is shipped in mail trains free of cost, while the legitimate patron of the mails pays the postage. Seven tons a day is a considerable quantity of palaver to be handled free by a country at war. It is bad enough to have this hot air spilled in the halls of Congress, but the public doesn't have to listen to it there. To have it forced upon us, overburdening an already overloaded postal system, is straining the country's patience. This is one of the abuses that should be corrected.

Publishers know how the cost of paper has cut profits. Congress knows it; the problem has been before the national legislature for three years. And yet Congress is guilty of extravagant wastes of paper, and of hampering the postal facilities with matter that is not only non-revenue-producing but serves absolutely no useful national purpose. A daily record of congressional doings may be necessary, but the people do not desire, nor should they longer countenance, the practice of senators and representatives using their franking privilege for political purposes. Let Congress set the people an example in cutting out waste.

✦ ✦ ✦

This Farmer's Program O. K.

Cope, Colo., Sept. 15, 1917.

Relative to crops. Possibly I am a little optimistic, but from my point of view prospects were never better, not only for crops, but for the betterment generally of the dry land farmer. I base my optimism on three things: (a) the good prices, (b) the abundance of cash crops, (c) last but by far not least, the wonderful feed crop grown here this year that will enable the farmer to retain every growing animal as well as every breeding animal.

Personally, I shall not sell one animal that will bring forth young next year, nor will I sell anything that will gain a hundred pounds in weight within the next twelve months. I have the best feed crop this year I ever raised. My millet made a yield of more than two tons to the acre, and my cane is good. I have my cane seed cut ready for the thresher and no sign of frost. Corn is nearly all safe. Those who silo their crop are putting it in a little greener than usual, owing to the scarcity of help, but nevertheless it is well advanced and will be of the maximum feeding value.

Those who cut their crop for dry fodder are getting it into the shock plenty early as well as green, but the weather is cool and damp and I think the prolonged curing will bring the ears out in pretty good fill. Of course we have those with us who never have any feed in the spring, consequently they get their crop in late. They are going to be the heavy losers this year. Their corn is late and they never cut the fodder and save it; just let it stand and trust to luck and the weather; as a result they will be without feed next spring, and plant their crops late again.

I do not know of anybody who has planted wheat yet. We had a good rain last night that will warrant the planting of wheat. I do not try to plant wheat. I had difficulty getting help long before the war and the help situation is far worse now, so I am going to do my "bit" at something else that will not require any additional help.

Beans, beans, who's got the beans? We've all got beans galore. I took the bean situation as a joke in the spring and planted an old road to "pintos." The Mrs. has canned and dried and cooked them green until we, dream BEANS. I went out the other day and took a look at that bean patch. I'll never be out of a job again this fall. I can pull beans when I want a rest, or cannot find anything else to do. There are plenty of beans to feed the army and still have seed to plant double the acreage next year, and they are well out of the way of frost.

In summing up the situation of the dry farmer I have great confidence in the future; that is, in the parts I have visited, and I hear very favorable reports from other sections.

Individually, I should not worry. I have four fine shoats and a beef in the feed lot getting ready for the shambles this winter. We are milking ten cows and selling the cream for 44 cents per pound and have a brood sow ready to farrow to take care of the surplus milk and other refuse about the place, as well as a fine bunch of hens to lay 50-cent eggs this winter.

Last year we made enough bacon to supply our needs, besides selling several dollars' worth of meat, and that good old-fashioned home-made lard. This year we are planning on selling meat and lard enough to buy our sugar and other necessities that we cannot produce ourselves. We are not producing much surplus, but we are keeping out of the market, leaving what someone else sells for someone else to buy.

I am probably a little enthused about the ultimate outcome of the dry-lander, but I believe they are "picking up" at a rapid rate, and if we can get that 5 per cent money started this way we are going to own this country some day.

ROY MARPLE.

Livestock Situation Is Critical

The livestock situation in the country has never been so serious as it is today. The demand, both domestic and foreign, is so much greater than the supply that even unparalleled prices do not suffice to furnish the meat needed. The long period of unprofitable production drove growers into other vocations. The increased value of lands and lack of pasture in the older farming districts prevented an increase of farm animals to keep pace with the growth of population. The settlement of the West decreased the area of the ranges. Even when the scarcity was felt and war demands accentuated the situation, the unprecedented call for breadstuffs brot all grains to a price which almost prohibited their use in the making of meats.

The campaigns so successfully waged to increase hog production in Rocky Mountain territory have met their first decided check this year, as is shown by a 23 per cent decrease in the receipts at the Denver market.

Word now comes that the situation among the warring countries abroad has grown decidedly worse. The British government has ordered two million acres more of grass lands put into grain, and livestock decreased accordingly. A similar policy is being followed in all other European nations. Every stimulus that could be employed has brot but a very slight increase in cattle during the past few years, but not nearly sufficient to keep pace with the growing demands. In the past decade and a half, sheep have fallen off in number nearly ten millions, and swine half as much, in spite of the fact that we have not only experienced an unusual foreign demand, but our own population has increased nearly 25 per cent.

This is not the worst of it. The cutting down of livestock in farming districts has decreased the production of the land to an enormous degree. It is estimated by many good authorities that the production per acre of the staple crops of wheat, corn, oats and potatoes has fallen off on an average in the last generation almost one-third, while large areas of farm territory have been turned back to brushwood.

It is exceedingly unfortunate that this condition should arise at the time of our entrance into the great world war. A continuation of such conditions as we have recently experienced will further reduce the productivity of our grain fields, the grass lands essential for the growing of livestock, and seriously affect the future of our farming production.

With the demand for an increase of meats has come an unprecedented call for wool, which can only be met by a strenuous campaign of education to place flocks on every farm in the country.

There has never been a time when the need of increase in livestock was so essential and so advisable as is the present. The stock shows, the agricultural colleges, the extension workers and county agents should unite their efforts with all the agricultural press in a campaign to relieve the present serious situation.

No section can offer better opportunities for livestock growing than are found in the intermountain territory. We have an ideal climate, the richest of grasses, and can produce the best feed for the growing and finishing of meat animals. Many of our most profitable crops are not needed for breadstuffs. The highest priced bacon in the world is produced from barley, which is an enormous yielder in Colorado and adjacent territory. No better pork is grown anywhere than that fed on peas, which are most profitably grown thruout our mountain districts. Our root crops are unexcelled, and no stronger hay is raised in the country. Even the by-products of the crops, such as grains and sugar beets, have surprised the livestock world in their value in producing meat animals.

We have another advantage, namely, the quality of meats of all kinds produced on our native feeds and grasses is of the highest, and there is no doubt we can do much better in future than we have been able to do in the past.

There is much we may do now to hurry an increase in supply. With grass costing little or nothing in the past, we kept our steers till they were 3 or 4 years old. Thru a campaign for early maturity, we can easily reduce this age by at least a year, thereby making room for a larger number of animals, to say nothing of producing a better beef, with less waste. The same general principles will apply to hogs and sheep.

Our people should not be misled into plowing up too much grass land. The greatest crop we have, and, indeed, the only one we cannot do without, is grass. We should give its growth the same consideration, at least, that we give our other crops. The most economical way to increase production is to do better farming on what we now cultivate, rather than plow up a lot of good pasture which is very difficult to replace.

E. M. AMMONS,

Chairman Farm Bureau, Denver Civic and Commercial Association.

Friendship and charity and a kindness that includes all the varying people of this varying world are within the reach of all, while play, recreation, the art of joy and laughter, are accomplishments we may every one of us acquire, even though we begin late in life!

Comment by Farmer Putnam

PORK AND PINTOS THE SUBJECT OF A DISCOURSE BY OUR FRIEND FROM THE SHOW ME STATE

Denver, Colo., Sept. 25, 1917.

NOW that I got everybody puttin' in fall wheat, I guess it's time to begin to say, "Quit raisin' wheat and go to raisin' pigs." Of course, we got to have the wheat and we cain't hardly git too much. The price fur 1918 is guaranteed by the government to be $2 a bushel to the farmer, and Herb Hoover's price fur 1917 is $2.20, so us farmers cain't lose nuthin' even if the war stops this winter. I seen in some of the papers where fellers is kickin' about the $2.20 price, but them's the kind that would kick if the figger was $10 a bushel. It's the nachnally contrary cusses and the trouble-makers that's a fussin' about wheat prices. You don't see the farmers who has got the wheat land and the seed layin' down on the job, and I guess that's about the best evidence that Hoover's price is right.

That bein' fixed o. k., let's git after the hog business. I see where the stockyards in all them Western towns is hollerin fur more hogs, and so I went around to investigate what was the matter, thinkin' maybe they wanted to git a over-supply so's they could run the market down. What did I find out? Nuthin' was further from their thots; in fact, some of them packers told me that it's all wrong about them controllin' the market. They told me so theirself. They sez they has to pay fair prices or the people will quit producin' meat. They admitted they wasn't exactly payin' a premium on animals; they did want to make a little money on 'em—just enough to pay salaries and have a little extry fur gasoline on Sundays, but on the whole they was inclined to give the farmer the best of it, because he needed the money worse than they did. I found the bunch down at the yards a nice lot; they treated me to cigars and said they would watch my writeup about the hog situation and see if I knowed what I was writin' about.

Well, I reckon I know. I've stuck more hogs than lots of them fellers that's buyin' 'em down in the hog pens. And then I've helped dip 'em in a barrel of hot water and scraped the bristles off of 'em and cut 'em open and sawed off the hams and shoulders and made scrapple and headcheese and pickled pigs' feet and salt side and sausage. I been all thru that game and know about as much about it as Mr. Armour and Mr. Swift. I bet I kin meet either one of them two packers right today in a hog-scrapin' contest aud git my bristles off first. So I know what I'm talkin' about when it comes to hogs.

Some of you farmers may be wonderin' why it is that I'm advising more hogs. Well, it's because the world is short of fats. I been talkin' to some of them experts. It was durin' the Filipino war that some army officers got the wrong hunch about feedin' our boys in the tropicks. They said because the boys was goin' to the Filipino islands, which is near the equator, they wouldn't need no fat food, no pork especially, because fat was so heatin' that they couldn't stand the climate at all if they eat any of it. I reckon they wanted to keep up the army on lemon ice and fruit cocktails. But they found out different. They seen that the men in the volunteer army was droopin' and wasn't able to stand the work like the reg'lars, which had their usual allowance of pork. Well, one day a bunch of reg'lars was encamped near some of them volunteers and the reg'lars was cookin' breakfast bacon. As soon as the smell of the bacon got in the air, the volunteers sniffed it and made a break fur the camp of the reg'lars. There come near bein' a riot, and the reg'lars had to split up on bacon with the volunteers. After that the volunteer army sent fur pork and the men got their daily allowance of fat that their bodies needed.

That there principle is understood in them European countries. The men that's in the trenches has got to have tats. The people back in the homes kin git along without it, or with just a little, but they're showin' the effects now by bein' literally livin' skeletons, some of 'em dyin' by inches because they don't git no fats. The soldiers has got to be kept in fightin' trim, and no man kin be in good condition if he don't git the fat that his body needs to run the machine. Fats is just like the oil fur the motor car—when the oil gives out the bearin's is ruined.

Last spring and summer when feed was up so high hogs went a kitin' and everybody rushes on the market. You didn't see much of a break in prices, did you? No, hogs stayed high and they has stayed high, and they will stay high till we kin satisfy the demand fur fats from this country and Europe. We got to have beef, too, because any kind of meat has fat, but it takes the old hog to make the real lard and bacon.

Now, it stands to reason that you cain't make good pork lessen you has some fattenin' feeds fur the hogs. We got a-plenty of feed this fall—corn out on the plains, some kafir down in Southeast Colorado, lots of milo and kafir in New Mexico, field peas and barley in the high-up country, beans that didn't git quite ripe, and alfalfa. Then they is no end of roughage, and in most of them dry farmin' sections we got milk cows, where the farmers sells the cream and keeps the skim milk fur the pigs. With all them feeds, even when we cain't make a big corn crop like they do back East, they ain't no excuse fur not makin' pork to go with the pinto beans that we growed fur the soldiers.

Our boys kin lick the kaiser if you give 'em a fair show, but they cain't do it unless we feed 'em well, and I'd like to have you all tell me where you goin' to git somethin' that's better than pork and pintos. I eat a mess of pinto beans last night with a slice of pork cooked in 'em and the result is as follers:

Pork and pintos, they're hot stuff—
Give 'em hell, boys, treat 'em rough!
Kick the kaiser in the slats,
Smoke 'em out their holes like rats.
Drive 'em back acrost the Rhine—
Pork'll do it, soaked in brine.
Pork and pintos, meat and beans,
Makes a man fill out his jeans,
Keeps our soldiers feelin' fit.
Come on, farmers, do your bit,
Raise some hogs and feed 'em well,
Help our boys give Wilhelm hell!

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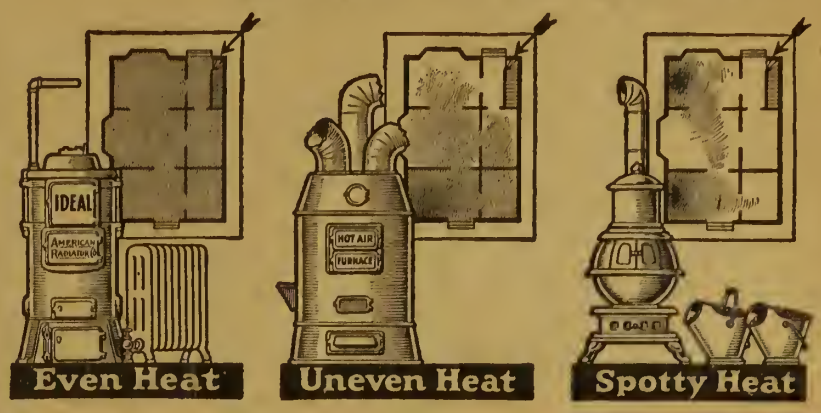

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Dairying and Hog Raising

GEO. E. MORTON

Free advice on the commercial or technical features of dairy farming and hog production. Please address your letters to DAIRY DEPARTMENT, WESTERN FARM LIFE, DENVER, COLO.

The first of the talks on breeding and feeding of dairy cattle by Professor Morton appears in this column. This series will continue for some time. In order to get the full benefit our readers are urged to ask questions. The talks are to be conducted in institute fashion. Professor Morton is at the service of all readers of WESTERN FARM LIFE and questions will be answered in subsequent articles. Bring him your problems of breeding and feeding. The intention is to help you build up your herd and make commercial dairying more profitable. Address letters to DAIRY DEPARTMENT, WESTERN FARM LIFE, DENVER, COLO.

Breeding Dairy Cattle

I. I am beginning this series of articles with a discussion of breeding because I consider it the most important phase of livestock production, as well as by all odds the most interesting. To me there is nothing so fascinating as watching the outcome of a calf whose sire and dam and grandparents I have chosen for certain characteristics which pleased me and made me believe the combination of their blood should produce new animals a step nearer the ideal in production and beauty of form. I have no message now for the man who buys a bull for the sole purpose of getting his cows fresh, and with the intention of selling the heifer calves to the butcher or to a neighbor. Such a man has in dairying a legitimate trading and manufacturing business — buying raw materials and manufacturing them into milk, but he has nothing ahead of him in the future except buying a little closer, feeding a little more economically and marketing to better advantage.

The man who breeds and grows his own dairy cows has the vision before him of building from year to year a herd of cows with inherently greater production; a herd that is the product of his own brain and hands and which he can work among with the comforting thot in his mind, "Thus far have I progressed since I started my herd ten or twenty years ago."

Animal breeding requires all the knowledge of physiology, chemistry, and heredity that one can bring to it. The practice of it for the beginner is fundamentally simple — merely the mating of two animals; but the farther he goes the more he has to learn. The building of really great herds gives play for the most active of brains and the best of judgment. I would like to open up to those of my readers who are interested a vision of the possibilities of animal breeding, and in order to do that we must begin by mastering first principles.

It has long been a fundamental law of heredity that "like begets like." Teaching this law in this form has resulted in discouragement of beginners, because progeny are so often unlike their parents; so we modify this by saying that "like begets like or the likeness of some ancestor," or "like begets like in general characters while variation occurs in details of characters. The point is that there is wonderful stability and continuity to hereditary characters, and if blood is kept unmixed so that a given line of inheritance has possessed certain characters for many generations, these characters can be counted upon with great certainty for the unborn generation. Herefords beget red animals with white faces, and an animal born with black upon it would at once stamp at least one of the parents of impure blood, an outcross in some past generation being an assumption necessary to explain the foreign characters. And yet, while Herefords have many breed characters which stamp them as Herefords, there is a great variation in Hereford individuals. So general is this that there are no two individuals precisely alike. Variation is just as universal and just as certain to come as the inheritance of like characters. How can the two be reconciled?

The Laws of Similar Inheritance and of Variation cannot be reconciled, and we do not want to reconcile them. The one saves us from chaos, from a maelstrom of characteristic boiling up from all the great mass of living things that have existed upon the earth from the time of creation; and the other saves us from a dead level of mediocrity in which every individual would be alike and there could be no advancement because of no variation.

The Law of Similar Inheritance is the protection of the commercial breeder, the man who buys a beef bred bull with the assurance that he will produce offspring of beef type and not of dairy type. The Law of Variation is the hope of the man who seeks advancement, who wants his cattle all of one type, and yet wants them to vary so that there may be selection, and is willing to accept the fate of having some individuals appear below the average of the herd in individuality in order that he may seize upon the variations in the other direction and perpetuate those that

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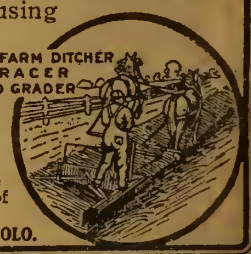

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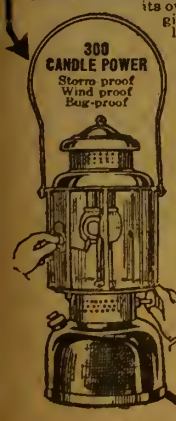

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The question naturally arises, "How and to what extent can these laws be controlled?" and this question will be taken up in the next issue.

Dairy Situation Serious

International Milk Dealers' Assn.,
Milwaukee, Wis.

Attention Mr. John LeBeber.

I have been requested from three sources to answer your letter concerning the normality of the dairy cow situation. I can speak only for the state of Colorado. Here, feedstuffs are so high that there is no present profit in selling retail milk or cream for the making of butter. The city of Fort Collins has a population of 10,000. The price of milk here has been 8⅓ cents per quart ever since 1907, when I came here. At that time hay was worth $6 per ton, corn was worth 90 cents per hundred pounds, and oats were worth about 80 cents per hundred pounds. Now hay is selling for $18 per ton, corn for $3.55 per hundredweight, and oats for $2.20 per hundredweight. As a result three of the larger herds supplying the town are all for sale. The dairymen within the past month met and raised the price of milk to 10 cents, but that is not enough raise to bring them out on their cost of feed. A similar condition has existed near Denver, Pueblo and Colorado Springs, the three largest towns in the state, Denver having a population of 250,000, Pueblo with about 60,000 and Colorado Springs with 20,000. I have reports coming from various country districts in the state saying that farmers are selling off their dairy cows. I consider the situation here serious, altho it is not immediately dangerous. We are doing everything we can to get people to continue breeding livestock without curtailment, because we feel that the future market is bound to justify it. In the meantime, however, the campaign to secure a greater return for the dairymen is in my opinion justified.—G. E. Morton.

Answer to P. A. M., Lebanon, Colo.: I know of no firm making a specialty of small home cheese outfits. The best way is to buy ordinary vessels, or some of the ones that are commonly kept on a farm. For heating the milk the most convenient vessel for use on a kitchen range is an ordinary wash boiler. One needs a curd knife, if they are to do a good job of cutting the curd into even-sized squares. A small cheese press can be gotten from any firm handling dairy apparatus, but where one makes a cheese only occasionally, a plank may be fastened at one end, the cheese box under the middle, and the other end of the plank weighted. For a cheese box, any circular box or tin vessel which is the same diameter all the way up and down will serve the purpose. For special cheese making materials such as you wish to buy, write the Beatrice Creamery company or the L. A. Watkins Merchandise company, Denver, Colo.

Dairy Notes

L. I. Weigand resigned his position as cow tester for the Arkansas Valley Cow Testing association, joining the hospital corps, and is in training at Fort Logan. Harold J. Ryan takes up the testing work and will complete the year.

County Agricultural Agent R. C. Allred states that they are again planning on making a shipment of high-class dairy cows to Garfield county during October. Mr. Allred, thru the co-operation of the State Dairy commission, has been instrumental in importing a number of carloads of Holsteins into Garfield county in the past.

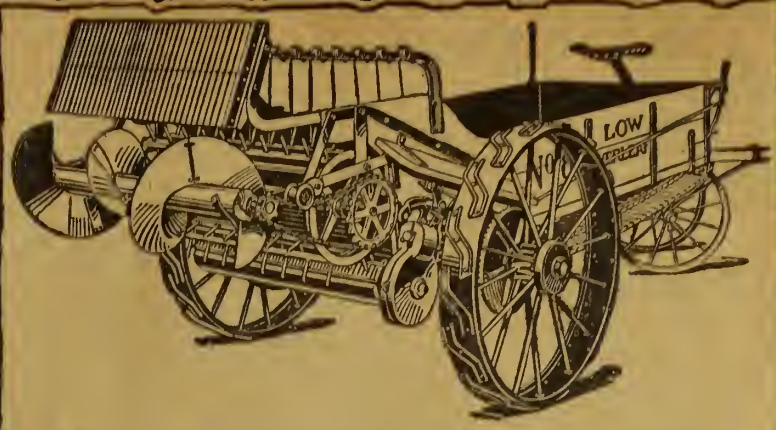
H. U. Wallace, general manager of the Western Light & Power company at Boulder, purchased 35 head of 2-year-old Holstein heifers as a foundation for a dairy herd at Fort Collins. Mr. Wallace purchased the old Grable place north of Fort Collins and has built a modern dairy barn, silos, etc., in preparation for the new dairy.

R. McCann, deputy dairy commissioner, and H. A. Chaplin, cheese specialist for the Dairy division, United States Department of Agriculture, with headquarters at Salt Lake City, are making a visit of the cheese factories on the Eastern Slope, making a survey of the factories with a view to placing a cheese specialist in Colorado if the possibilities of development warrant, who will spend his entire time developing the cheese industry. A meeting is planned at the Cedar Grove factory at Goodpasture, and visits will be made to La Junta, Swink, Cheraw, Haswell and Arapahoe.

Take Colt From Mare

Please tell me if I can give my mare something to dry up her milk? This mare has a colt over one year old and still nursing. I can't put a muzzle on it, for it is so wild I can't handle it. The mare is getting thin and doesn't seem so well. She usually keeps fat at all times, but now she doesn't seem to get fat at all. Can't keep them in different places, for I haven't separate pastures.—J. W., Aguilar, Colo.

When a normal female is giving milk the only way to suppress it is to quit milking her. There is nothing that can be given with safety that will suppress the mare's milk in this case as long as the colt is nursing. You will simply have to take the colt away from the mare.



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WE have added the New No. 8 Spreader—Spiral Wide Spread, Light Draft—to the Low Corn King and Low Cloverleaf lines. We are in a position to suit exactly any regular farmer, whatever his previous spreader experience may have been.

Grasp an opportunity to study the features of the No. 8, the spreader for every average farm, the lightest draft spreader made. No. 8 has the famous International spiral wide spread that has thoroughly demonstrated its success as a wide-spreader for all-around use. In addition, the Low Corn King and Low Cloverleaf lines provide you with your choice of larger capacity spreaders, with the regular disk-wide-spread (well-known wherever spreaders are sold) or with the spiral spread on special order.

The New No. 8 Spiral Wide Spreader and other Low Corn King and Low Cloverleaf Spreaders will go onto thousands of farms before the close of the year. They are all light-draft, low-loading, easy-handling, built of steel—and satisfactory. We have an idea one of them would stand a good chance of going onto your farm if you were fully posted. At any rate it will pay you to write us for catalogues. Write the address below.

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(Incorporated)

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common kerosene (coal oil), no odor, smoke or noise, simple, no pumping up, no pressure, won't explode. Tests by U. S. Government and thirty-five leading universities show the Aladdin gives three times as much light as best round wick flame lamps. Won Gold Medal at Panama Exposition. Over three million people already enjoying this powerful, white, steady light, nearest to sunlight. Guaranteed. And think of it—you can get it without paying out a cent. All charges prepaid. Ask for our 10-day Free Trial Offer and learn how to get one Free.

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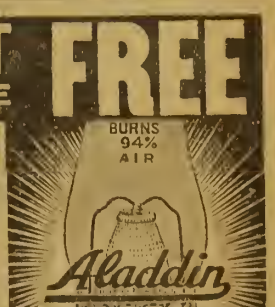
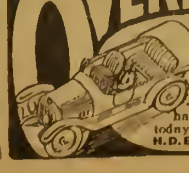
Largest Kerosene (Coal Oil) Mantle Lamp House in the World



OVERLAND GIVEN



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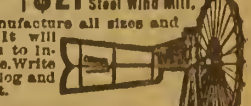
H. D. Brattar, Mgr., Dept. A, Omaha, Neb.

$16.50 Sweep Feed Grinder. | $21.00 Galvanized Steel Wind Mill.

We manufacture all sizes and styles. It will pay you to investigate. Write for catalog and price list.



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610 E. Seventh St., Topeka, Kansas

The Farm Home

MRS. H. T. FRENCH

Questions about home problems promptly answered by letter and thru the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

October

October chill is in the air,
Her winds are high and keen,
But all her beauties seem most rare
On Hallowe'en.

—Selected.

Smiling

When the weather suits you not,
Try smiling.
When your coffee isn't hot,
Try smiling.
When your neighbors don't do right,
Or your relatives all fight,
Sure it's hard, but then you might
Try smiling.

Doesn't change the things, of course,
Just smiling,
And it cannot make them worse—
Just smiling.
And it seems to help your case;
Then it sorter rests your face—
Just smiling.

—Sunshine Bulletin.

Dear Readers: The editor has received so many letters from the friends of this department during the last six weeks that she wishes she might have several pages of the Western Farm Life devoted to the discussion of the many timely topics concerning home, school and community life and plans for a busy and profitable winter; however, if we cannot do all we would like, let us continue to become better acquainted, and I can now hear you saying—

"Trimming lamps or hearing lessons,
Putting this and that in place;
Tired feet and busy fingers
Giving home its touch of grace,
Making, mending little garments,
In a mother's deftest style—
Washing little hands and faces,
Planning something all the while."

In spite of the above sentiment that expresses discouragement and monotony, all of which many of us busy mothers have felt during these busy weeks as we have gone about our fall duties, weary and anxious, it is not half as weary and dreary as an existence with nothing to do and no loved ones to minister to.

What matter if busy the whole day thru, if when the beautiful twilight comes, hearts and homes are filled with love and contentment?

The plays of children are the germinal leaves of all later life.—Froebel.

Hallowe'en

Few young people nowadays let pass the night of October 31st without a party quite different from any other party. And this year as you rack your brains for some new trick or game, maybe the following may help you. In Northern England Hallowe'en was long known as "nut-crack night," and immence quantities of nuts were consumed on that night.

A nut game: Place a large wooden bowl filled with nuts in the center of the table. Have individual wooden or Japanese bowls and nut-crackers for the guests. For the guest who fills her bowl first with cracked nuts, have a prize, and let the consolation prize be a ridiculous peanut doll.

Guessing game for Hallowe'en: With pencil and paper, the answers all commencing with the word nut.

Questions.	Answers.
A bird	Nuthatch
Something sweet	Nut cake
An instrument	Nut cracker
An excrescence	Nut gall
A food	Nut meal
Fruit of a tree	Nutmeg
Used in commerce	Nut oil
A tree	Nut pine
In constant demand	Nut coal
A rich color	Nut brown
A kind of beetle	Nut weevil
A covering	Nut shell

Are you keeping a scrapbook of games and suggestions for the celebration of holidays and birthdays?

For Luncheon or Supper

An attractive and palatable dish may be made from the very simple ingredients of bread, cheese and milk. As these are three concentrated foods, they make a most excellent substitute for meat.

According to quantity desired, toast several slices, or half slices of bread. Butter a baking dish and place in it first a layer of toast, then of grated cheese and another layer of toast and one of cheese. Add to each layer a little pepper and salt and a very little cayenne pepper. Pour in milk enough to reach the top layer, and bake about fifteen minutes in a medium oven. Serve hot. An egg mixed with the milk will add to the richness of the dish.

Apple Jonathan

Peel and slice, very thin, four large or five small Greening or any tart apples, place in deep pudding dish or baking dish with two tablespoons of cold water. Make batter with one-third cup of butter, one large cup of granulated sugar, two eggs beaten thoroly, two large cups flour with four teaspoons baking powder and one teaspoon salt sifted together; stir well and then add flour. Blend the whole carefully, then pour over apples, let stand five minutes before placing in oven. Bake thirty minutes.

Sauce: One and one-half cups sweet milk, one tablespoon butter, one-half cup sugar, two tablespoons cornstarch, three tablespoons of raspberry jam. Place milk in double boiler, let boil slowly, mix butter, sugar and cornstarch together, add one-third cup cold milk, mix until smooth, then stir slowly into the boiling milk, let boil five minutes, then remove from fire and add raspberry jam. Serve warm.

Replies to Subscribers

Replies to requests for October:

Brown Bread: Make steamed brown bread of a cupful of cornmeal, white flour and graham flour. Sift meal and flour twice with a teaspoon of salt. Make a hole in the mixture and pour into it a cup of boiling water in which an even teaspoon of baking powder has been dissolved. Now add a cup of milk mixed with a gill of New Orleans molasses. Beat hard and long, turn into a greased mold with tightly fitting top and steam for three hours.

White Potato Soup: Into a cupful of mashed potatoes work a pint of hot milk and a tablespoon of melted butter (making a puree). Cook together a tablespoon each of butter and flour and pour upon them a pint of rich milk. When thick and smooth, pour this into the potato puree, stir until scalding hot; season with salt and pepper; stir in a teaspoon of minced parsley, and pour gradually upon a beaten egg. Serve at once.

Buckwheat Cakes: Sift with a quart of buckwheat flour, a teaspoon of salt and a generous handful of cornmeal. In a gill of lukewarm water dissolve a yeast cake, and add two tablespoons of molasses and a quart of warm water. Make a hole in the center of the sifted flour and meal and pour in the liquid. Beat hard for five minutes. Set in a warm place to rise over night. If on uncovering in the morning the batter should smell at all sour, work into it a very little baking soda, dissolved in a tablespoon of warm water. Cook on a soapstone or aluminum griddle if so fortunate as to possess one. The writer uses a good old-fashioned iron one heated very hot and greased with a piece of fresh salt pork, or clean swab dipped in bacon fat.

A Housewives' Pledge

Some of our readers in different localities have organized themselves into neighborhood clubs and signed the pledge below for more effective patriotic effort in behalf of food conservation as well as community upbuilding. May we not hear from any other communities, families or individuals who have some interesting plans for service?

To the Food Administrator,
Washington, D. C.

I am glad to join you in the service of food conservation for our nation and I hereby accept membership in the United States Food Administration, pledging myself to carry out the directions and advice of the food administrator in my home, in so far as my circumstances permit.

Name .....

Street .....

City ..... State .....

Occupation .....

Number in Household .....

Occupation of Breadwinner .....

Will you take part in authorized neighborhood movements for food conservation? .....

Have you a garden? .....

There are no fees or dues to be paid. The Food Administration wishes to have as members all of those actually handling food in the home. All women over 16 are eligible.

Directions: Mail your pledge card to the Food Administrator, Washington, D. C., and you will receive free your first instructions and a household tag to be hung in your window.

If, in addition, you would like to have the official button of the Food Administration and a sleeve badge bearing the insignia of the administration, send 10 cents and a return addressed envelope with your pledge card, and one or both of these, as requested, will be sent you.

The directions for immediate organization and co-operation given on this card, if complied with by our readers, can bring us together as one great working, sympathizing body and thru the columns of the Western Farm Life we can be of much service to many an isolated, busy housewife. Let us hear from you.

PATTERN DEPARTMENT

All Patterns 15c each. Address WESTERN FARM LIFE, Pattern Department, 14th and Arapahoe, Denver, Colo.

2191—Dress for Elderly Ladies. Cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Requires 6⅛ yards 36-inch material for 36-inch size. This style is lovely for satin, silk, crepe, gabardine, serge and broadcloth. The fronts are finished with vest portions. It is gathered over the sides and back. The sleeve is new in its shaping.

1973—A Popular Style. Cut in sizes 16, 18 and 20 years. Requires 5⅝ yards 44-inch material for 18-year-size. This style may be made with the sleeve in wrist or elbow length. The pocket is unique in its shaping. This dress is easy to develop and nice for serge or gabardine, velvet or satin. Braid or embroidery will form a suitable trimming.

2165—Junior's Dress. Cut in sizes 12, 14 and 16 years. Requires 4¼ yards 44-inch material for 14-year size. Linen in white, natural or other shades is nice for this model. Khaki cloth, drill, gingham, chambray, percale, serge, gabardine, poplin and corduroy are also desirable.

2166—Practical Play Suit for Mother's Boy. Cut in sizes 2, 3, 4 and 5 years. Requires 1¼ yards for the blouse and 2⅛ yards for the overalls of 27-inch material for 3-year size. This is a splendid style for khaki, gingham, chambray, linen, lawn, corduroy, galatea, poplin and drill. The blouse may be of lawn, cambric or linen, and may be finished with long or short sleeves.

Uncle Sam Says "PRESERVE"

The government urges you to "put up" all the fruits and vegetables you can. If you don't need them someone else does.

To be sure your fruits and jellies will keep, seal them with Parowax. It prevents fermentation and mould by keeping out all air.

Parowax has no taste or odor. It is absolutely pure. At grocers and druggists everywhere in handy pound cartons.

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The minute you get running water in the house you are ready for "Standard" Plumbing Fixtures—for a white enameled Kitchen Sink, Bath Tub, Laundry Trays. All these splendid fixtures—made by the house of *experience* in the plumbing field—represent

Genuine Home Comforts

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There are always some "extras" that you could like for yourself, your family or your home; or perhaps some special things that you have set your heart on. Why not have those "extras" you want and need? If you have any spare time at all, we will show you how you can get them by looking after new and renewal subscriptions for WESTERN FARM LIFE in your community.

Write us today (a postcard will do) and we will tell you how you can earn some extra money for yourself, without any cash outlay on your part.

Western Farm Life
Denver, Colo.

Profitable Farm Poultry

W. E. VAPLON

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries Poultry Department, Western Farm Life, Denver, Colorado.

Under the heading of "War Lessons From English Poultrymen," Mr. T. E. Quisenberry writes an interesting article in the September Pacific Poultrymen which gives us an insight into conditions in Great Britain and contains information of value to every poultry raiser in America. At a meeting of poultrymen held at Amherst, Mass., which Mr. Quisenberry attended, he heard a talk by Mr. Edward Brown, who is considered England's most noted lecturer and writer on poultry topics. Following is a summary of this talk:

Feed has advanced about 100 per cent since the beginning of the war, and eggs have advanced 80 per cent. If they use the same rations for laying hens as previously, it costs $1.50 more per hen for feed, but they get $2 per hen more for their eggs. The government does not allow the use of wheat or oats as poultry food. Where poultry has been given the range of the farm, in many cases, it costs only 15 per cent to 20 per cent more than formerly to feed the farmers' hens. Many poultrymen are succeeding remarkably well by feeding chiefly on green food, roots and bran and eliminating most grains. They give all the range possible. They are learning to grow some of their own feeds, especially green food.

Mr. Brown advises at this time against easy feeding or wasteful feeding. If, by a little extra effort, you can save something that is now going to waste it will pay you to go to that trouble. He stated that he never saw such extravagance as in this country, and he has traveled in many countries. This is not only true of poultry, but of all things. The English "dollar" doesn't go far in America. In spite of submarine warfare, corn, wheat and oats are cheaper in England than in America. This is something that is hard to understand, for it seems that under present conditions they should be cheaper here. It is their custom to feed mashes in the morning and grain at night. Practically every man feeds differently. Each feeds what is at hand and adapts himself to the circumstances.

Mr. Brown said that the fanciers and poultry shows had been hurt most in England. He said there was a great gulf and a continual fight between the fanciers and the utility men in that country, much more so than here. He advised never letting that division become so marked in this country.

Particular stress was laid upon the importance of encouraging back-lot poultry keeping just at this time. Mr. Brown thought that millions of Americans should be urged to raise poultry in the towns and cities. In England the back-lotters are doing exceptionally well at this time. The waste from the table, the parings from vegetables and fruit go a long way toward keeping a few hens.

Eggs were selling at 60 cents per dozen and poultry by the piece instead of by the pound. Farm poultry averages 110 to 120 eggs per hen each year, and those in the hands of specialists average about 140 to 145 eggs. Eggs have increased in price more than poultry.

Mr. Brown thought that this war, in the end, would benefit the industry in many ways in this country. It would bring an end to many of the fads in poultry keeping. People would study the business and proceed along saner lines. Each new condition that the country faces brings new problems, but we should meet and solve them in the same way as the English poultrymen have. The high prices of eggs are going to educate the people to the value of eggs, so that after the war the prices never will be as low again and the consumer will not object so much to paying reasonable prices for eggs in the future. The whole of Europe practically will have to be restocked with poultry at the close of this war, and they will have to depend largely on America for their breeding stock. He stated that in the present crisis and scarcity of food England regarded her poultry highly, for it was proved that the hens of England were picking up $45,000,000 worth of grub and waste products from the soil which would absolutely be wasted, and which no other animal would be able to use and to turn into food.

From what I have been able to learn, continues Mr. Quisenberry, I believe that from 30 to 50 per cent of the fowls and older stock in this country have been marketed. That accounts for the great amount of poultry in storage and the present low price of poultry meat. It seems to be the opinion of practically all that those who have kept their poultry have done the right thing and will make a greater net profit the coming winter and next spring than ever they have made in any previous year. There will be a scarcity of breeding stock and the man who has stock or hatching eggs is certain to have a great demand at profitable prices. Missouri, Kansas, Iowa, Indiana and the other great grain-producing states are going to profit more than some of the other sections, but there is no state in the Union where eggs cannot be produced at a reasonable profit, and in many cases at a handsome profit.

The only difference between the poultry business of today and a few years ago is this: Then feed was cheap and a poultryman could make a lot of mistakes and still stay in the business. He can make more money today than he did then, but he must know how. Feed prices are certain to go down some when the growing corn crop goes on the market. Eggs are certain to be higher than ever known.

As I see others bring their troubles to you, I will come, too. I wish advice about the best poultry for this part of Colorado. We have only been here one year last February and have tried mixed ones. I sent to Denver and paid $9 for three Black Minorcas and still have done no good. Think I will try Brown Leghorns. Can you tell me where I can get the best laying strain Rose Comb Leghorns close here? In Oklahoma I had the Black Minorcas and they were laying at five months old, so I am sadly disappointed in these.—Newcomer, Cahone, Colo.

By all means in producing poultry as well as any other crop for market, personal preferences and prejudices should be laid aside and market requirements should be the main factor in making a choice. While it is acknowledged that there is no best breed, that is no one breed answering all requirements in the highest degree, certain breds are preferable for certain purposes and one should be very careful in making a choice. The breeder should first know what is desired in his flock and if eggs are to be the chief product the breed producing eggs at the least cost should be chosen. If eggs and meat both are required, then a fowl of some size should be chosen, especially if that fowl is a good producer of eggs.

Producers are inclined to let their own personal choice or preference influence them, and often condemn a breed because of some unfortunate circumstance or because of conditions which are not favorable to the fowl.

It seems to us that "Newcomer" will have a long and difficult hunt for fowls that mature to laying age in five months. Individual pullets may begin laying at that age, but we have no breed or variety in Colorado that will do it. Briefly, the smaller breeds are considered the most economical breeders of eggs, require less house room, less feed, and because generally they are better rangers. The medium sized breeds, such as the Rocks, Wyandottes and Reds, are usually chosen where both meat and eggs are required, and will be found as prolific layers under the management usually given on the farm. Colorado markets are inclined to discriminate against black legs or feathered legs on the fowls. If "Newcomer" wil send his name and address to the State Agricultural college he will receive some poultry bulletins.

WONDERFUL EGG PRODUCER

Any poultry raiser can easily double his profits by doubling the egg production of his hens. A scientific tonic has been discovered that revitalizes the flock and makes hens work all the time. The tonic is called "More Eggs." Give your hens a few cents' worth of "More Eggs" and you will be amazed and delighted with results. A dollar's worth of "More Eggs" will double this year's production of eggs, so if you wish to try this great profit-maker, write E. J. Reefer, Poultry Expert, 4247 Reefer Bldg., Kansas City, Mo., who will send you a season's supply of "More Eggs" Tonic for $1.00 (prepaid). So confident is Mr. Reefer of the results that a million-dollar bank guarantees if you are not absolutely satisfied your dollar will be returned on request and the "More Eggs" costs you nothing. Send a dollar today, or ask Mr. Reefer for his free poultry book that tells the experience of a man who has made a fortune out of poultry.—Advt.

F. C. Taylor FUR CO. ST. LOUIS

HELPS YOU TRAP FUR ANIMALS

Trappers will make big money this year. Furs are in demand at high prices—Coon, Mink, Opossum, Skunk, Muskrat and other kinds are plentiful. Many animals are good food. U. S. approved recipes free.

FUR MONEY for YOU

Help Book Free

Tells how to trap; traps and baits to use; how to prepare skins so as to get highest prices, and describes latest trapping devices, including the new SMOKE TORPEDO. Shows pictures of all animals in colors, and supply catalog. ALL FREE—WRITE TODAY.

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We pay highest prices for Furs and sell you Guns, Traps, Supplies, etc. AT FACTORY COST. Write for FREE CATALOG, TRAPPERS' GUIDE and Fur Price List. E. W. BIGGS & CO. 128 Biggs Building Kansas City, Mo.

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Sell direct. Cut out all Middlemen. Ship to us.

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The Grange

Introducing Mr. Otis Scruggs, the hustling business agent of the Colorado State grange, who has just been made secretary of the state grange because of the resignation of Rudolph Johnson, who has answered the nation's call as an officer. The good wishes of thousands of Colorado Grangers go with Mr. Johnson, who will soon be "somewhere in France" fighting the battles of democracy.

Mr. Scruggs already had a comfortable lot of duties as business agent, and he is busier than ever now with the additional secretarial duties. His office in room 415, Charles building, Denver, is state headquarters for all Grangers. They are invited to come in and save money. It pays to buy thru the state grange. Evidently the Grangers think so, for the business agent reports a total volume of business since he took charge, March 1st, and up to September 1st, of $113,000. In this sum is included $11,567.08 for automobile tires alone, on which the purchasers are saving themselves just 20 per cent over the retail price.

This service is open to all members of the grange in Colorado. What can they buy? The writer asked Otis Scruggs and he said: "Everything except marriage licenses, and we will accompany applicants to the court house to get those, if necessary."

Drugs, dry goods, implements, tools, tractors, autos, tires, wearing apparel, paints, lumber, coal, posts, plumbing supplies—in short, anything and everything that a Granger may want, will be purchased for him at wholesale rates, thru this service. It cuts the cost of living on many a farm.

The system works both ways, for the business agent helps the producer market his products. A short time ago Enterprise grange, No. 258, in the Holly neighborhood, complained that local broomcorn buyers were offering only $60 to $100 a ton for brush, and asked the business agent to see if he could not get a better market outside. He went after it, and today buyers from all sections are competing for the broomcorn in that section

Mr. Otis Scruggs

and offering as high as $325 a ton for the best brush.

Another instance is that in regard to the famous clover-timothy hay of the Steamboat Springs district. The local market was offering $7.50 a ton for this, which was a good figure considering prices that usually prevail. But the Grangers believed they were not getting market figures, so they appealed to the business agent. Result? They are selling this hay at $20 a ton, f. o. b. Steamboat Springs, now. As soon as the outside buyers heard the hay was to be had, they went after it.

These are only a few brief hints as to the work of the business agent, who was farm-born, lives on a farm near Golden, but has to leave most of the farm work to the "hands" because the Grangers keep him busy from early till late at his office arranging for purchases, etc. Mr. Scruggs comes of an old-time Granger family, his mother owning the original charter granted to the Texas State Grange, a document that is well worn and yellow with age. He left the farm for some years and followed railroading, being trainmaster for the Denver & Salt Lake railroad at the time of his appointment as business agent.

These few facts of a personal nature are sufficient to introduce Mr. Scruggs, the secretary and business agent, to the Grangers who have not yet met him at his office. He has a notion that a man in his position should be judged by results rather than by his history, so we will let the figures given above speak for themselves. And this is just the beginning of activities that will save the Grangers many thousands of dollars every year if they take advantage of this co-operative feature of their organization.

Our farm adviser says: "Don't plant tea in coffee grounds."

Practicability of the Lister to Store Winter Snowfall

Continued from Page 5

against a current so swift and strong that a man cannot resist it with his arm. However, when these streams are measured to ascertain the amount of water they will supply for irrigation, the measuring shows that the water near the surface and just below it is moving very swiftly, but that the water at the bottom of the stream, where the fish are moving, is almost still. The friction of the stones along the bottom has checked the current until the water barely moves. While the dry land farmer cannot stop the speed of the winds, he can check their movement and destroy their effect at the surface of the soil by leaving the surface rough or deeply corrugated. The dry land farmer should keep the surface of his cultivated fields rough and corrugated at all times when a crop is not growing on them.

The lister is one of the best implements for keeping the soil rough so that it will not blow and for putting the ground in condition for accumulating and holding the moisture. As soon as a grain or a forage crop is removed from the land in summer, or any crop in the fall, the field should be disked immediately. Then, as soon as practicable, the land should be listed deeply. The listed rows should not be more than three and one-half feet between centers. Three heavy horses with a single lister can cover eight acres a day.

The deeper the lister is run the better. When run deeply, it throws the land into sharp ridges, and this stops the movement of the soil by the winds. The loose dirt that is thrown by the lister on the ridges acts as an efficient mulch to hold the moisture.

The land should be listed early in the fall and kept ridged as listed thru the winter. The snow will accumulate in the furrows and, as it melts, will sink deeply in the ground and be held there. With the average amount of snow practically all the moisture in it will be held in the listed furrows. Where the surface is level the greater proportion of the snow is blown off the cultivated land. Deep furrows hold the water that falls in the autumn and spring rains until it is absorbed by the soil.

Lessons in Agriculture Learned at Longmont Fair

Continued from Page 3

boys' and girls' clubs. Incidentally, the baby show was conducted on approved plans—that is, approved by those who like to have their babies scored like livestock.

Boys' and Girls' Clubs

There were demonstrations each day at different hours of the day of cooking, and of the canning and drying of fruits and vegetables. Each of the cooking and canning clubs of the county furnished teams for these demonstrations, which were conducted under the supervision of Miss Maude Sheridan, assistant state club leader. I happened to be present when the cooking team of District No. 10, comprising Sarah and Eva Craggs, Ruth Burke and Helen Hockaday, was on duty. The girls prepared scalloped potatoes and salmon pudding and some of the visitors were allowed to taste of their excellent cooking. These demonstrations were conducted in contest for silver medals, for which there was great rivalry between the various teams. An electric stove was used, and, while the cooking was going on, vegetables were drying on the rack placed over the range. Housewives thus got an object lesson in thrift that was helpful.

The exhibits by the boys' and girls' clubs attracted much attention. A silver cup was the trophy.

There were good displays of livestock, including horses, cattle of both beef and dairy breeds, hogs, poultry and pet stock. It was a complete fair in every respect, including a good racing program, various free events in front of the grandstand, such as acrobatic and animal performances, clever comedy stunts and the usual "concessions," where money is thrown to the grafters.

The fair association is a non-profit

Turn to Page 15

CUTTER'S
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For the Prevention of Blackleg in calves and young cattle

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Insist on Cutter's. If unobtainable, order direct.
Write for new booklet, "The Control of Blackleg." It tells about Anti-Blackleg Serum which cures Blackleg and may be used simultaneously with vaccine to combat outbreaks and safely protect valuable stock.
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Kansas Germ Free Fluid Vaccine
OVER 250,000 calves vaccinated and every one proved immune. Originated at Kansas Agricultural College by members of this Company. Being germ-free it cannot spread the disease and a single dose will do the work. It safely immunizes and immunizes safely. We tell you all about this vaccine and how to get it in our booklet, "No More Blackleg." Write and ask for one of these booklets. They are free.
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THE
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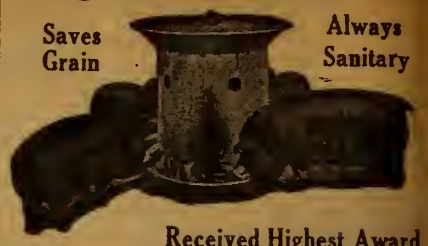
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PULLFORD TRACTOR, $135
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Big Money in Running Water
Let us start you in a business that will make you from $15 to $50 a day when farm work is slack. Other men have done it for years with an
One Man One Team
Improved Powers Combined Well Boring and Drilling Machine
Same rig bores through any soil at rate of 100 ft. in 10 hours, and drills through rock. One team hauls and operates machine. Engine power if wanted. Easy to operate—no experts needed.
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Write today for measurement blank
The J. Durbin Surg. Supply Co.
1508 Curtis St., Denver, Colo.

Farmers' and Stockmen's Exchange

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WANTED—TO HEAR FROM OWNER OF FARM or unimproved land for sale. O. K. Hawley, Baldwin, Wisconsin.

WANTED—TO HEAR FROM OWNER OF GOOD ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minn.

FOR SALE—160 ACRES GOOD LAND, FOUR miles from Haswell. Also house and lot in Haswell. $3,500 takes both. Minnie S. Boone, Pagosa Springs, Colo.

160 ACRES HIGH, DRY RIVER BOTTOM land; covered in switch cane; cattle need no feed during winter; feed on the cane; one of the best stock farms anywhere. Price, $20 per acre. Henry Clay, Winthrop, Ark.

IRRIGATED FARM FOR SALE—225 ACRES, five miles from Denver Stockyards, one mile from railroad station. First-class water right; excellent improvements; liberal terms. J. D. Hitch, 525 Cooper bldg., Denver.

DO YOU DESIRE A HOME? OR DO YOU want to sell or trade the one you already have? We are in a position to assist you either way. We will find you a customer who will buy your real estate, or we can find you a home for cash or easy payments anywhere you choose. Let us hear from you at once. Perry & Son, Weldona, Colo.

LET ME SHOW YOU THESE WELD COUNTY non-irrigated snaps. Each offered on account of illness or death, and prices at these very low figures for quick turn. 160-a deeded and 160-a relinquishment, sandy loam, 5 miles from railroad, suitable for stock; fence and well; $1,200. 320-a sandy, 60-a cropped, fair improvements, 7 miles from railroad; stock, forage crop and beans; $3,200. 320-a best of wheat and general farm land, well improved, 2 miles from postoffice, 9 miles from railroad; dandy; $4,500. Send for list and map. Mackley, 1643 Champa, Denver.

IRRIGATED LAND NEAR DENVER FOR SALE on crop payments, in tracts of 80 acres and upward; 50,000 acres to select from. We are not agents but trustee closing out large trust estate under order of court. Within 10 to 30 miles of Denver and near railway towns having sugar factories, canneries, creameries, alfalfa mills, elevators, etc. Fertile soil, under splendid irrigation system. Terms, one-tenth cash, balance 10 annual payments, interest 6 per cent, but first four years purchaser need only pay us two-fifths of crop in lieu of regular payments due those years. Write for literature. Chicago Title & Trust Co., Trustee, 716 Ideal bldg., corner 17th and Champa sts., Denver, Colo.

I HAVE SOME CASH BUYERS FOR SALABLE farms. Will deal with owners only. Give full description, location and cash price. James P. White, New Franklin, Mo.

GOVERNMENT LANDS

GOVERNMENT LAND. FREE BOOKLET. JOseph Clark, Sacramento, Cal.

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CATTLE

EXCELSIOR FARM HOLSTEINS—BULLS $60 and up. Cows and heifers for sale. Western Kansas. C. C. Cole, Levant, Kans.

100 CALVES FOR SALE—100 HEAD OF PUREbred Hereford calves for sale. Very reasonable if taken at once. For price, address Owner, Box 55, Hillside, Fremont Co., Colo.

ALL OF OUR GRADE COWS AND HEIFERS must go and part of the purebreds. A lot of them will be fresh in 60 days. Also a very nice stallion 8 years old, record 2:10, a grand individual. M. E. Penrose, 1855 Blake st., Denver. Phone Main 5713.

SHIP YOUR LIVE STOCK TO US—COMPEtent men in all departments. Twenty years on the market. Write us about your stock. Registered breeding stock bought on orders. Market information free. Ryan-Robinson Com. Co., 225 Live Stock Exchange, Kansas City, Mo.

REGISTERED JERSEYS AND MILKING SHORThorns. Jersey herd headed by Maggie's Shay Duke, 140084, Grand Champion Denver Stock Show. Two nearest dams average 54 lbs. milk per day. Shorthorns headed by Independence Lee 427351. Two grandams average 9023 lbs. milk in one year. The Hinman Silo Co., 1650 Champa st., Denver.

HOGS

REGISTERED, BIG TYPE DUROC JERSEY hogs for sale. Edgemoor Farm, Littleton Colo. Caldwell Martin, Owner.

POULTRY

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QUALITY DARK CORNISH, THE IDEAL FARM fowl W. W. Officer, Fowler, Colo.

QUALITY DARK CORNISH—UTILITY AND exhibition stock for sale. R. H. Jandeheur, Alma, Neb.

S. C. BUFF ORPINGTONS. STOCK FOR SALE. F. M. Shank, R. No. 2 A, La Junta, Colo., State Vice-Pres. Nat. S. C. Buff Orp. Club.

A FINE LOT OF VIGOROUS, EGG-BRED S. C. W. Leghorn cockerels for sale. They will improve your flock. Rowley Egg Farms Co., Palisade, Colo.

FOR SALE—ALL KINDS OF PUREBRED poultry, cocks and cockerels, geese, eight kinds of ducks, pearl and white guineas, bantams, hares, rabbits, guinea-pigs, dogs, fancy pigeons, canaries. Write wants; free circular. D. L. Bruen, Platte Center, Neb.

FOR SALE—RHODE ISLAND RED AND White Leghorn cockerels and pullets from the finest bred-to-lay matings in all the world. Not exhibition quality or color specials but birds bred from 235 to 250-egg birds. These birds will raise the egg-producing qualities of any flock 50%. A trio will raise a flock of living egg machines. Select birds weighing 1½ to 2½ pounds, $2 each. No star boarders, but producers. Money refunded if birds are returned. The Golden Egg Farm, Salina, Kansas.

MISCELLANEOUS

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WHITE SWEET CLOVER SEED, REASONABLE. John Lewis (farmer), Madison, Kans.

WANTED—RENTER FOR A 160-ACRE IRRIgated farm; excellent proposition. W. E. Foard, Fort Collins, Colo.

RAW FURS WANTED—DON'T SHIP YOUR wool, poultry, hides or furs of any kind until you get our price list. Perry Brothers, Weldona, Colo.

FARMERS AND STOCKMEN—IF TROUBLED with Loco Weed, you can kill it with our Loco Killer without chopping or digging. Also want men to handle territory. If interested, write Western Mfg. & Trading Co., 1543 Glenarm, Denver, Colo.

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MAN TO WEAR FINE SUIT—ACT AS AGENT. Big pay, easy work. Banner Tailoring Co., Dept. 699, Chicago.

SALESMEN WANTED—OWING TO DRAFT and enlistment, we have a few well-worked territories open, and will be pleased to hear from interested persons. Applicant must be exempt from draft. McConnon & Co., Dept. R, Winona, Minn.

RAILWAY MAIL CLERKS WANTED—MEN, 18 or over. Commence $75 month. Every second week off with pay. Education unnecessary. Sample examination questions free. Write immediately. Franklin Institute, Dept. H. 177, Rochester, N. Y.

THE WAY TO GET A GOVERNMENT JOB IS thru the Washington Civic Service School. We prepare you and you get a position or we guarantee to refund your money. Write to Earl Hopkins, President, Washington, D. C., for book FK 847, telling about 292,296 government positions with lifetime employment, short hours, sure pay, regular vacations.

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KODAKS, CAMERAS, PHOTO SUPPLIES—Fords, the best kodak store, 1029 16th St., opp. old P. O., Denver, Colo., for Eastman Kodaks, all makes cameras, films, photo supplies; develop any size roll films, 10c; print pictures, 3c each and up; mail orders solicited; kodak and camera catalog mailed free upon request. Mention this paper.

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WE BUY AND SELL PATENTS. INTERNAtional Pat. Co., 583 Brandeis, Omaha, Nebr.

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BLUE MERLE AND ENGLISH SHEPHERD pups. Hermann Bruesehoff, Norwood, Minn.

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BUY TREES FOR YOUR ORCHARD OR GROVE and have two and three years to pay at the same time. All stock that fails to grow replaced free. Address Weldon Valley Adv. Co., Weldona, Colo.

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LET US TAN YOUR HIDE—COW, HORSE OR calf skins for coat or robe. Catalog on request. The Crosby-Frisian Fur Co., Rochester, N. Y.

BEE SUPPLIES AND HONEY

BEE SUPPLIES OF BEST QUALITY. SEND for 68-page illustrated catalog. We also sell Comb and Extracted Honey. The Colorado Honey Producers' Association, Denver.

Lessons in Agriculture Learned at Longmont Fair

Continued from Page 14

corporation, supported by a company, in which the farmers and business men of the county hold the stock. About $18,000 of stock has been sold. This draws no dividends and represents, in effect, a loan to the fair association, on which the lenders get no interest. All of the surplus goes into improvements. The surplus of the 1916 fair built a new cattle pavilion for 1917. The property on which the fair is located belongs to the city of Longmont, having been donated for park purposes. It must always be used for the benefit of the public; if not, it reverts to the original owners or their heirs. There are nearly 400 stockholders in the fair association, some of them living in the adjoining county of Weld. The spirit of co-operation between the business men and farmers of the county is responsible for the continued success and growth of the fair.

OVER 3,000 PERCHERON SALES

These transfers of sale were made on the Percheron Stud Book alone in the four months ending March 1st, 1917

Does This Mean Anything to You?

It should prove beyond a doubt that farmers everywhere are fast seeing the possible profit in raising better stock and are anxious to secure the seed for a foundation in Pure Bred Sires and Dams.

Big Drafters Command the Highest Prices Ever Known to the Trade

Horses are and always will be as necessary as plows. Get in the game NOW and reap your harvest from good seed.

Write us today your desires. We will be glad to correspond with you.

Our horses won 42 First and 14 Grand Champion prizes in Colorado and Wyoming in 1917 show season just closed.

The Jarosa Ranch
HOWARD M. JAY, Owner
R. F. D. No. 2, Box 71
Longmont, Colo.

Percheron and Belgian Horses
Holstein Cattle

REGISTERED HOGS OF LARGE TYPE

Boar and sow pigs with both size and quality. Our pure-bred swine have made prominent winnings every year in competition with prominent herds of the middle west.

Our Duroc-Jersey pigs are mostly sired by Orion Cherry King Again, a son of the Grand Champion Boar of America who won last year at the National Swine Show over the Grand Champions from all the leading State Fairs. This boar is the large, stretchy kind, and has sired the best lot of pigs we have ever had farrowed at the College. We bred the Grand Champion Sow at Denver last year, selling her to the Colorado breeder who exhibited her.

Our Poland-China sire weighed 820 pounds as a senior yearling and has good width and ham. Pigs by him for sale.

Our Berkshires we can safely state, after seeing eastern herds, rank with the best. We won first on Get of Sire at Denver last January, with pigs sired by our herd boar.

COLORADO AGRICULTURAL COLLEGE
Animal Husbandry Department FORT COLLINS, COLORADO

HIGH CLASS JERSEYS AND DUROCS

I have a corking good yearling bull, out of a cow that has just qualified for Register of Merit; also a dandy November calf out of a R. M. cow. These are priced right. Can you use one of them?

Also some Duroc boars, March pigs, by a son of Grand Model, and out of a daughter of Model Critic. They are good, and priced at $50 each. Worth more money.

Above calves sired by the great Count Majesty

A. M. McCLENAHAN Greeley, Colorado

Percherons, Belgians, Shires One of the largest breeding herds in the world. I can spare 75 young registered mares in foal to herd sires weighing 2,300 and 2,400 pounds. Two, three, four and five-year-old stallions, ton and heavier; also yearlings. As a producer of the best specimens with size, substance and soundness, this herd has no superior.

FRED CHANDLER, ROUTE NO. 7, CHARITON, IOWA, JUST EAST OF OMAHA

Registered Duroc Jersey Hogs

The big-type kind. Boars and Gilts sired by Col. Uneeda, Second. Everything cholera immune. BRAE SIDE FARM, E. D. Hardman, Owner, Route 1, Box 240, Pueblo, Colorado.

BARGAINS Percherons, Belgians, Shire, Suffolk, Clyde, Hackney, Great Coach Stallions, $450 and up. Good Jacks One, two and three years' time given purchasers.

R. I. LITTLE
Good Block Des Moines, Iowa

GALLOWAY'S

Separators—Engines—Spreaders—Tractors

Don't buy any implement until you see what Galloway can save for you. Learn all about my low prices and fine quality. I sell you direct from my factories at the lowest manufacturer's price, and if I cannot save you big money on the best implements built I don't want your order.

Write Now for New 1918 Book

I want this great book in every farm home. Let it be your buying guide for anything you need on your farm. It will save you a big amount of money in the course of a year. Send for your copy today. It's free. A postal will do.

WM. GALLOWAY CO., Box 1827
WATERLOO, IOWA

JACK MEN, LISTEN

I have the largest 6-year-old jack west of the Missouri River for sale. Other bargains in Mammoth jacks and jennets.
Inspection Invited Satisfaction Guaranteed
W. H. WHEELER, Garden City, Kan.

BLUE RIBBON HERD

DUROC JERSEY HOGS
Everything Registered
Stock for Sale
C. F. BURKE, Rocky Ford, Colo.

Save Half Your Shoe Money

Sizes 1 to 13 Heights 6 to 17 in.

Wear Overland Aluminum Shoes They last twice as long as all-leather, rubber or wood-soled boots and shoes.

Water-Proof, Rust-Proof, Rot-Proof

Best leather uppers. Thick felt insoles. No metal touches you. Warm, comfortable, easy to walk in. Keep feet in good condition and prevent sickness. Best by test for all work in any weather. MONEY BACK if shoes do not meet with your approval. Write for FREE catalog which shows styles, gives prices and tells how to order. A postal brings it.

OVERLAND SHOE CO., Dept. 52 B, Racine, Wis.

FURS

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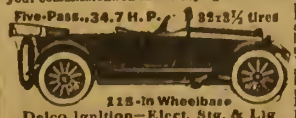

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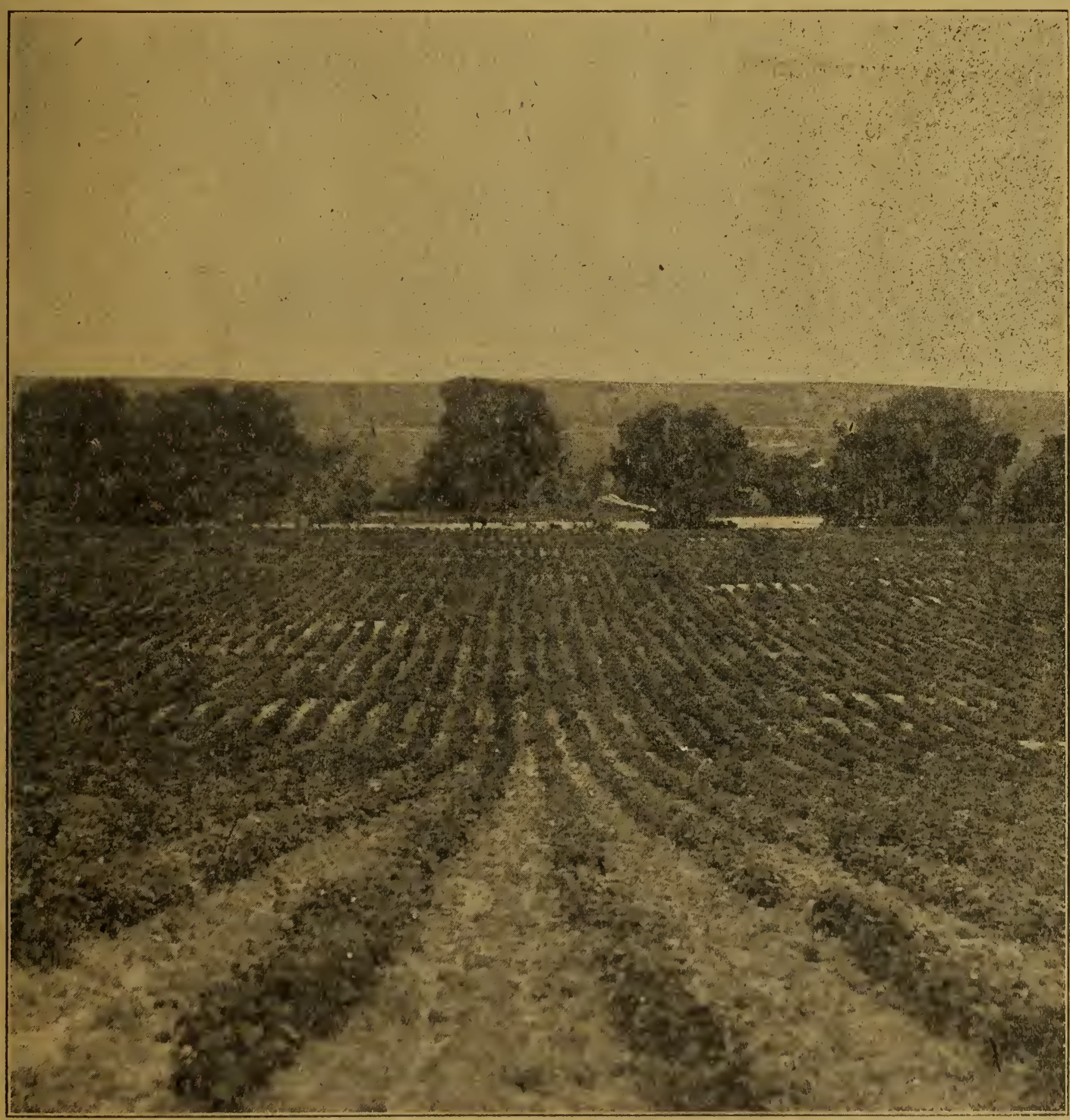
Western Farm Life



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Oct. 15, 1917

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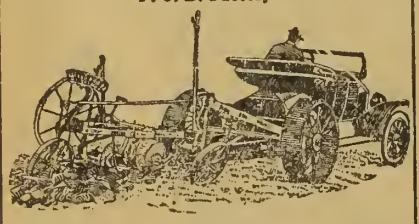

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Utilizing Sugar Beet Tops

An acre of beet tops from a twelve-ton crop of beets, if properly cared for, contains about as mnch food value as one-half acre of corn silage. The easiest way, bnt not the best way, to take care of beet tops is to graze animals on them. A great deal of food is trampled into the gronnd. The leaves dry and are blown away. The pieces of the beets left with the leaves dry ont and become leathery, so that the animals can hardly chew them.

If milk cows are allowed unlimited access to beet tops they nsually overeat. They sconr easily and the milk has a bad flavor. Often they eat so mnch tops that they cannot eat alfaifa. Tops alone are not milk prodncing food; therefore, excessive feeding of beet tops often dries np the miik flow.

The best way to feed tops is to hanl a limited qnantity to the animals to be fed. In order to preserve the tops until they can be fed it is necessary to stack them in small piles in the field after they are wilted a little. This can be done with a fork, shaking it in order to avoid getting too much sand and dirt into the piles. Tops will keep in these piles nntil they are hauled to the feedyard, if they are not too green. If they are piled too green, or the piles are too big, they are liable o rot. Even after the beet harvest there is still time to pile the tops in the manner described.

Steers, hogs or yonng stock can be given as mnch as they will clean np. If they are given more they will waste a great deal. Brood sows should not be given too mnch, as they will get too at.

Milk stock should not be given as mnch as they will eat. One or two forkfnls of the dried tops are enongh per feed. Of the green tops more can be given. To maintain an even flow of milk radical changes in feeding should not be made. With a limited nnmber of cows and a given amount of beet tops the best results are obtained if the tops are made to last nntil green pastnre is available in the spring, even if this means only a small amount of tops per head per day. In some dairy districts in northern Colorado beet tops are made to last into May. Of course, cows giving twenty ponnds of milk or more per day receive grain, besides the hay and tops, bnt less grain is fed with tops than without it.

When sheep are grazed on tops they frequently try to swallow too hastily and often choke. During the first days it is necessary to watch them closely to avoid this.

Steers of good feeder qnality, if given unlimited access to beet tops, with about fifteen ponnds of hay per head per day, can be expected to make a gain of about 1.5 ponnds per day under moderate weather conditions, bnt in cold weather considerably less.

A very important reason for feeding tops in the corral instead of grazing them is that when bedding is nsed a mnch larger qnantity of mannre is prodnced, which can be spread where it is needed most. The time spent in hanling straw for this pnrpose is always a profitable investment.

Beet tops can aiso be siloed in pits. The pit can best be made just wide enongh to allow wagon and team to drive thrn it, and as long as wanted. Of course, the deeper the better.

The tops are hanled green into the pit and the wagon and team driven over them to tramp them as tightly as possible. The more air that is excluded, the better the silage. When the harvest is finished the top can be covered with straw. The tops will keep this way more than a year. Usually only the snrface is moldy and has to be removed.—H. Mendelson, in bnlletin "Essentials of Beet Farming," issned by Great Western Sngar company.

The candle still has a place. The home that cannot have electric or gas lights probably can afford a pretty candelabra for the dining table. This, when filled with well-trimmed candles, makes a table centerpiece that will give distinction as well as plenty of light for the meal. Candies are also nice for bedrooms, and many housekeepers like them to use in the kitchen to supplement a bracket lamp —Southern Agricultnrist.

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Largest Circulation of Any Farm Magazine in the West

Volume XIX DENVER, COLORADO, OCTOBER 15, 1917 Number 20

Farm Crops Are Matured Without Summer Rainfall

STORED MOISTURE RESPONSIBLE FOR GOOD SHOWING AT ADENA FAIR

ALVIN T. STEINEL

THAT it is possible to bring farm crops to maturity without rainfall during the period of growth is known to many dry land farmers, but it is not often that such crops may be seen at fairs drawing red and blue ribbons. This was one of the remarkable features of the Adena community fair, held late in September.

Adena is situated at the southern border of Morgan county, 22 miles southwest of Fort Morgan, in the heart of a fertile dry farming district. Thruout the entire plains region the summer rainfall this year came in streaks. While most sections got timely rains that helped make crops, other sections, usually narrow belts of country, received no showers after the first week in June. Crops had been planted in moist soil, as May was a fairly wet month, following normal winter moisture, consequently growth was started and the sunshine did the rest. I saw corn, potatoes, tomatoes, Sudan grass, and other garden and field crops the leaves of which had received no freshening showers, while the roots thrived on moisture that came previous to planting.

The Adena fair was participated in by farmers from both Adams and Morgan counties, and the county agents, George R. Smith of Adams and C. G. McCord of Fort Morgan acted jointly in the arrangements. Both were on hand to help make it a success. It was the third fair held at Adena and great progress had been made over previous efforts, especially in preparation and arrangement of exhibits, as well as in quality of the products shown. The farmers were highly complimented by Mr. McCord on the manner in which the various crop specimens were displayed.

The judging was done by C. H. Alford, recently appointed county agent for Lincoln county, who was a visitor at the Adena fair. County Agent George R. Smith explained the reasons for the placing of the ribbons. There might be some question, he said, concerning the reasons for awarding a blue ribbon here and a red there, when the specimens shown seemed to the casual observer to indicate a different result. In the case of some very good looking wheat he said close examination disclosed that it contained yellow berry, and wheat carrying a certain percentage of yellow grains gets a low grade on the market.

The potatoes were judged, not for size but for market shape and quality; cane, not for its seed but for its forage value, etc. Where there was but one exhibit in a class no ribbon was awarded unless the exhibit came up to the standard. Those who got ribbons, therefore, were assured of the excellence of their exhibits and they could point to an actual achievement.

One of the remarkable dry land crop specimens shown was a single stool of Sudan grass that had sprouted over a hundred stalks, making a bunch measuring 8 or 10 inches in diameter and about 5 feet in height. This was grown by J. O. McVay. Sudan grass is extensively grown in the Adena district, where it has shown great drouth-resistant qualities. There was a sample of feterita grown by Charles Smith that made fine, fully matured heads and a leafy stalk growth.

ON THE WAY TO ADENA

H. G. Hoops harvesting pinto beans. Crop put in June 15th on sod which was broken with a four-horse gang plow; harrow behind the plow and drill tied to harrow. Ground was moist and beans were up in three days. No cultivation was given. Photo taken September 21st. Yield estimated 500 to 600 pounds per acre.

Corn of all sorts was shown, there being here, as elsewhere on the plains, by far too many varieties grown. There was one sample of yellow flint with ears about 14 inches long. This was exhibited by August Denes, who also showed an unusual product—namely, tobacco, which he grows in his garden for his own use. He starts it in a hot bed and has no difficulty in maturing the plants.

There was an especially noteworthy exhibit of potatoes. William Reck had some Early Ohios that weighed more than half a pound each. Mrs. Laws showed Irish cobblers and other varieties of ideal shape and size, the kind most desirable on the market which show little waste in paring.

There were watermelons and cantaloupes in size and appearance equal to those grown in recognized melon districts; tomatoes much more solid and meaty than those grown under irrigation; cabbage and other garden products that testified to the foresight of the dry land farmers in providing crops for winter use.

E. Gregg exhibited sugar beets grown on upland with two cultivations that had no rain from June 7th to September 11th, and made a good yield. These beets are grown on dry land for stock feed or table use.

There was a particularly creditable display of wheat, shown both in the sheaf and threshed.

The display of needlework was of unusual excellence, many of the women and girls having devoted weeks to the making of articles of fancy work that entered the competition. These included pillow tops, bedspreads, table covers and various articles of wearing apparel.

An hour of the afternoon was given up to short talks, the meeting being presided over by George L. Peterson. The speakers included the two county agents, Rev. F. E. Bancroft, pastor of the Brighton Presbyterian church, who gave a rousing patriotic address, and Farmer Putnam, whos contribution was entitled "Ensilage."

Farm experiences were exchanged in and around the big exhibit tent. L. N. Prescott told the writer about his corn and bean crops. His corn was planted June 15th on land that had its last shower ten days before that date and samples of well matured corn were shown on which never a drop had fallen. Mr. Prescott was harvesting 70 acres of pinto beans which were made under similar conditions. He used a home-made harvester, rigging up two cutter blades to a beet cultivator and cutting two rows of beans at a time.

Case for Exemption

William and Walter Reck, brothers, each owning 320 acres near Leader, in Adams county, were on hand with some good crop specimens. The Reck brothers work their section of land together. William is married and has three children; Walter is unmarried and has been drafted for war service. He is, however, doing his country the best possible service by helping his brother grow big crops of wheat, corn and beans and helping take care of a good sized bunch of milk cows. It is almost impossible to get labor at inland points and the Reck brothers, with 640 acres to look after, do the work practically alone. If the unmarried brother is called to the front it means not only putting his own half section out of business as a farm, but will seriously cripple the elder brother, because he has no other help and cannot obtain it. With their combination of implements and labor they can pull thru big crops on both farms, but if one or the other drops out the whole scheme falls thru.

When I saw them they were in doubt as to whether to proceed with the sowing of a hundred acres of fall wheat in accordance with the advice of the Food Administration, or to wait until they knew the outcome of the drafting of the younger one.

Such exhibitions as the Adena Community Fair have been made possible by the activities of the county agriculturists. Adams and Morgan counties both having the benefit of the service of able men, naturally a community fair, located virtually on the county line where farmers from both sections participated, proved a success.

List of the Awards

Following are the awards of blue and red ribbons, respectively, in the order named:

Yellow Dent corn, J. O. McVey, H. D. Porter. White corn, J. O. McVey and Dana Hawthorne. White Australian corn, Frank Johnson, E. E. Baird.

Turkey Red wheat, Emil Schweizer, H. D. Porter. Durham wheat, G. B. Hampton. Winter rye, G. B. Hampton. Turkey Red wheat in sheaf, Dana Hawthorne, Frank Johnson. Durham wheat in sheaf, Frank Johnson. Barley in sheaf, Mrs. J. J.

(Turn to page 12)

CROWD IN FRONT OF EXHIBIT TENT AT ADENA COMMUNITY FAIR

Exhibits Grown at 6,000 to 9,000 Feet Elevation

GOODPASTURE FAIR SHOWS WHAT CAN BE DONE AT HIGH ALTITUDES

Sudan Grass over 10 feet tall, grown without irrigation on Murray Bros.' Ranch near Goodpasture. (Altitude 6,000 ft.)

MAY the fourth, nineteen hundred and seventeen, found the writer attending a meeting of mountain dairy farmers at Rye, Pueblo, county, Colorado. The following day there was to be a similar meeting at Goodpasture, a similarly situated foothills village, but that meeting was not held, because of a heavy snow. Other storms followed, May being a chilly, wet month. As late as the first week in June there was snow in the foothills. On the 25th day of September, 140 days after the big storm that stopped the Goodpasture meeting and about 110 days after the last trace of winter, I was back at Goodpasture to attend a fair. My recollection of the disagreeably cold, wet spring led me to expect a poor showing of farm crops. What I saw was astonishingly different. It was a revelation; sure proof of a fact often overlooked when we think of or write about so-called high altitude farming—that is, farming at 6,000 feet above sea level, or over. This fact is one recognized by those who make a study of climate and its influence on plant growth, namely, that as we gain altitude plants seem less susceptible to frost and cold and make quicker growth during the hours of sunlight than in a denser atmosphere nearer sea level. Then, too, the human body is less sensitive to cold at high levels. While neither man, animal nor plant feels changes of temperature as intensely as they do at lower elevations, the effect is apparent just the same; in man it is shown in exuberance of spirit and buoyancy; in plants in quick growth, high color and great vitality. History shows that among the world's most progressive nations have been those situated in climates of light humidity—some at high altitudes, others in desert countries. In such situations man's necessity for overcoming nature's obstacles to food production found the salubrious climate its most potent ally.

In proof of this dissertation I want to show you the Goodpasture fair, which even the people who arranged it did not find as significant as an outsider, because they have known for years what they can do in a short but glorious summer.

The agricultural exhibits were placed in the schoolhouse; the women's exhibits in the church; the livestock in the corral on the Roper ranch, and there was a home talent racing program on a half-mile track built for the occasion.

Space will permit only detailed mention of the exhibits in the schoolhouse. Nothing was shown that grew below 6,000 feet and there was one exhibitor whose products were grown at 9,000 feet above sea level—a mile and three-fourths up!

We will begin at the top, with Allan Mingus' exhibit. He is a mountain homesteader. About fifty acres of his farm is cultivable. He grows oats, barley, timothy hay and garden produce. His best cash crop this year was head lettuce; heads almost as solid as cabbage. His lettuce bed was visited by deer this summer and these epicures of the forest nibbled the hearts out of a few lettuce heads. Fifteen to twenty head of cattle are supported by the ranch, and butter is a good source of income.

There was frost on August 20 this year, but what at a low altitude would have ruined garden and field crops did no damage in the light atmosphere at 9,000 feet. Mr. Mingus' exhibit included some fine Early Ohio potatoes, turnips, rutabagas, black radishes and head lettuce.

Lewis Brothers, located on North creek, five miles from Beulah, at 7,000 feet showed four varieties of potatoes, six varieties of apples besides crab-apples, cauliflower that was literally perfect—the prettiest and most compact and even heads the writer ever saw at any fair; squash, peppers, tomatoes—ripened at 7,000 feet; cabbage, melons, beans, onions, peas and good quality wheat and oats. The grains are grown without irrigation, but water is available for the garden when needed.

In the fruit exhibit I saw some ripe peaches which I thot came from the lower country. "Are those peaches from Pueblo?" I asked. The answer was: "No; come outside and we'll show you the ranch where they were grown."

It was the Fred W. Lytle ranch (6,700 feet), about two miles from Goodpasture and plainly visible up the mountainside. The peaches were entered by Mrs. Lytle. There are five peach trees in the family orchard, and a good assortment of apples and plums.

Just across the road from the schoolhouse I saw and photographed the Roper orchard, comprising two acres of apples, plums and cherries. The apple trees are especially thrifty. This orchard has never been irrigated and fruit from it was awarded first premium at the International Dry Farming Congress in 1911, in competition with dry farmed fruit from the entire plains region of the North American continent. It won on quality and appearance.

Returning to the exhibits. C. N. Sellers of Beulah (6,600 feet) showed ripe Everbearing raspberries and strawberries. His strawberries began bearing in August and will continue to yield fruit until the first hard freeze.

Sudan grass, which is not recommended for altitudes above 5,000 feet, grew ten feet tall at 6,000 feet, in spite of all that the Murray Brothers could do to keep it down. R. P. Murray is a six-footer and I took him outside with his exhibit to photograph him. The heavy seed heads drooped, but the picture will give some idea of the height of the grass, which was grown without irrigation. There was some milo and some feterita and plenty of amber cane on exhibition, all grown at 6,000 feet or over.

Oklahoma dwarf broom corn grown by A. Whitlock of Beulah at 6,340 feet was another unusual exhibit. Mr. Whitlock also showed some good garden truck and yellow dent corn.

There were many exhibits of corn, mostly of the high altitude flint varieties, of short stalk and long ear, and several dent corns well ripened, or just about in condition for silage. Turkey red wheat was also much in evidence, good crops being grown on the long sloping hillsides or level mesas. There is less complaint of winter-killing than on the plains, as there is usually a better snow covering and the winds, while occasionally high, are less frequent.

Remarkable for variety from one farm was the exhibit of F. J. Morgan and Sons, five miles east of Goodpasture at about 6,000 feet. This included melons, cabbage, tomatoes, two varieties of potatoes, turnips, cucumbers, giant sunflower, cowpeas, lima, wax, navy and pinto beans, cantaloupe, beets, carrots, pumpkins, celery, squash, parsnips, three varieties of corn, oats, wheat, rye and several varieties of flowers. The Morgans got a good yield on eight acres of pinto beans. Their winter wheat made a light yield, fifteen bushels per acre, but showed a sixty-one-pound test at the mill. They cut fifty tons of silage from twelve acres of corn—the short stalk high altitude corn, grown without irrigation, as were all their other crops, including the garden. They planted potatoes in straw, putting the straw at the bottom of the furrow, and got a good yield, growing enough for family use.

Another remarkable exhibit was that of Mrs. O. S. Mackelfresh, who showed fifty-two kinds of jellies and preserves, being only five behind the famous fifty-seven varieties of our friend Pickle Heinz. There was a real antique in this collection—a jar of currant jelly put up in 1900—seventeen years ago—and still, to all appearances, in perfect condition. She also had wild grape jelly, put up in 1907, and some put up in 1911, but it was mostly of this year's preserving, including a bottle of choke cherry wine and one of dandelion wine. There were many other creditable exhibits, those selected for mention being representative of the fair and not necessarily the best.

In the livestock section the exhibits included beef and dairy cattle, some good Herefords, a few Holsteins and Ayreshires, and a nice showing of draft horses and mules. The mule colt class was especially strong in quality and numbers, indicating high-class jacks in the neighborhood.

The fair was in charge of a committee of the Goodpasture Farmers' Club, the officers of which are Walter Johnson, president; Guy Lambuth, vice president, and Emerson Lambuth, secretary. Frank Keho was chairman of the fair committee and he had a corps of able assistants.

Stanley V. Smith, county agriculturist, was there to help wherever he was needed. He helped form the Farmers' Club that made the fair a possibility, and its unqualified success was due to a spirit of co-operation and unselfish community pride such as may be developed in any good farming community that has at its call the services of a trained agriculturist.

The agricultural exhibits were judged by A. R. Pierce, a Pueblo seedsman, who has for over thirty years been a factor in the agricultural development of the Arkansas valley and who judges agricultural exhibits because he likes to do it and knows how to do it fairly.—A. T. S.

Nightshade Causes Deaths

While visiting the Western Slope fair at Montrose Dr. George H. Glover, head of the Veterinary department of Colorado Agricultural college, was called to Del Norte to investigate loss of cattle on the farm of J. A. Hall. He reports that the cattle died from poisoning and the poison in question was undoubtedly the spreading nightshade. The pasture had been eaten down to where there was not much left but weeds and among these the nightshade had been eaten freely. It was the only poisonous plant in the pasture. The nightshade is commonly called wild tomato, and while it is known to be poisonous, it is never eaten in quantities to kill unless there is a scarcity of other food. He also reports that the whorled milkweed is causing trouble in both horses and cattle at Montrose and Grand Junction.

Use the soft-shelled eggs at home. They ship poorly and may lower the grade of the others.

Put the farm machinery in first-class order during odd times this winter. An hour spent in repair may prevent, later on, a day of despair.

Fine Showing of Mule Colts and Mares at Goodpasture Fair: A. J. Biby and Frank Keho showing Ayrshire and Holstein Dairy Stock

The Russian Sunflowers Prove Excellent for Silage

WESTERN SLOPE DAIRYMAN WRITES OF HIS EXPERIENCE WITH CROP

GEORGE LA GRANGE

WE ARE told "Necessity is the mother of invention." To be successful in the dairy business it is an absolute necessity that the foodstuffs needed for the production of the finished products be of such a nature that economy is spelled in big letters every time the dairyman feeds the cow.

Berry's Donna, a promising two-year-old, on the farm of George La Grange

If anyone had suggested to the writer a few years ago that sunflowers would make an ideal dairy feed he would have hooted the idea, just as people are now doing to whom the thot is first suggested.

Feed stuffs produced on expensive lands must necessarily be more expensive than the same feeds grown upon cheaper lands, and the man who can produce the greatest tonnage of good feed upon a given area is the fellow who has a running start in the race for success in any agricultural pursuit. For this reason we were willing to try out the idea of growing sunflowers as an ensilage crop as suggested to us by Prof. Fred W. Merrill of the DeLaval Separator company, when he visited Grand Junction in the late spring of 1916.

It was an entirely new thing and of course we had many misgivings as to the ultimate success of the trial, so naturally we started our experiments on a small scale. A neighbor, however, with more nerve than we had, planted a large enough plot so that he had some in the silo when his corn was ensiled.

When this corn was fed out and the cows changed to the sunflower ensilage an increase in milk flow resulted. This was not guessed at, for he was wholesaling his milk to a dealer and the increase was readily observed when the change in feed was made. This year we hope to be in a position to mix corn and sunflowers as they go into the silo, so we may know whether, as has been suggested to us, the two will not make better feed than either one alone.

A prodigious tonnage can be produced upon highly cultivated and well fertilized lands, it being possible to get a much bigger crop of sunflowers than of corn from the same land. This has been proven by everyone who has tried the experiment. Then in this altitude (4,500 feet) two crops can be produced upon the same ground each season, with irrigation. This in itself is a big factor to the farmer who has to practice intensified farming.

Preparation of Ground

In planting the crop we prepare the ground much the same as for corn, being sure of a good seed bed. The plant being resistant to light frosts, the seed may be planted somewhat earlier than corn. Care, however, must be exercised during the early stages of its growth, as it thrives upon sunshine and warm weather. The irrigation water at this season of the year is very cold and if used too frequently gives it a decided check in growth, from which, like any other plant, it is slow to recuperate. However, this error will not affect the tonnage, but its effect will be noticed upon the time of maturity of the crop.

We plant in rows three feet apart with from one to three seeds in hills from ten to eighteen inches apart in the row, this to be governed by the quality of the soil. This year we had a small plot of three-quarters of an acre of alfalfa sod ground on which the hills were dropped every ten inches. This plot produced enough sunflowers to fill a silo twelve feet in diameter to a depth of 120 inches. However, the crop planted on old ground in the same way did not yield nearly so heavily.

Frequent cultivations should be given during the early stages of its growth, for it soon gets to the point where it is impossible to get thru, even with a one-horse cultivator. As with corn, cultivation counts for more than water. And yet both are essential to its rapid growth.

Up until blossoming time the pith of the stalk is sweet and very succulent. But as soon as the pollen appears the resin flavor peculiar to the sunflower plant develops very rapidly. On this account we have deemed it advisable to put it into the silo just as the blossoms are appearing. We have noticed the milk was tainted where the cows had eaten the mature green plant. (They will eat the green plant ravenously if it is run thru an ensilage or fodder cutter.) This resin flavor, however, may all disappear after the mass has gone thru the fermentation period. On this point we have no data and are not perfectly clear.

Plants Wilt Rapidly

When cut in the field for the silo filler we have found the plant wilts very rapidly and if cut with a corn binder it should not be left in the field too long, or the large bundles are liable to heat and cause mold to form before it is ensiled. It is well, too, to irrigate the crop about ten days before ensiling it, especially if your cutter does not cut shorter than five-elghths of an inch. We have found, however, best results are obtained by cutting in one-fourth-inch lengths, tramping it thoroly after it is in the silo. One man cannot do a thoro job in a ten feet in diameter silo with even as small a cutter as one with a nine-inch throat. Two are absolutely necessary, and they must be good travelers. It is no place for slackers.

I have noted one silo here where a one-fourth-inch cut was made in filling and one man did the tramping in which there is lots of spoiled ensilage. In another where a one-fourth-inch cut was made and the same man did the tramping, very little spoiled silage resulted. It is even more necessary to cut short if a carrier is used instead of a blower, as the blower has a tendency to pulverize the mass, thereby making it easier to pack.

We begin feeding at once, in that manner saving the spoilage that usually results from letting it stand until the fermentation period is over; also the cows are less liable to dysentery or over-looseness when they are brot gradually to a full feed of the fermented mass by feeding during the fermentation, than if they are started right off on a full feed of the fermented mass.

Farm of G. H. Pettengill & Son, Grand Junction, Colorado. The green sunflowers look good to McNanny 267194, A. J. C. C.

Cows Eat Less of It

We have found cows can not, or at least do not, eat as great a bulk of the sunflower silage as they will of the corn silage. Whether this is due to the fact that it is richer in feed value we do not know. Chemical analyses of the two plants in the green stage show the sunflower plant to be richer in protein and in carbohydrates than the corn plant, but leaner in fat. We have proven to our own satisfaction, and to the satisfaction of others, that it is an ideal dairy feed, yet we hesitate to recommend it for a fattening ration on account of the low percentage of digestible ether which it contains. However, recent experiments have proven that large quantities of protein are converted into fat during the process of digestion, so it is possible that it will also be a boon to the cattle and sheep feeders. We would like to see some experiments made with it for this purpose.

We have noticed in sunflower culture that the plant removes far less fertility from the soil than any other silo crop with which we are acquainted,

(Turn to page 12)

Colorado Pure Seed Law Also Applies to Farmers

STATE LABORATORY WILL MAKE TESTS OF FARM SEEDS FREE

COLORADO'S pure seed law became effective October 1st. It applies to seed dealers and farmers alike. Any farmer who expects to sell seed in Colorado is advised to send for Colorado Seed Laboratory Bulletin No. 1, addressing State Experiment Station, Fort Collins. This bulletin contains complete copy of the law and an explanation of its provisions. Administration of the law is under the supervision of Diretor C. P. Gillette of the experiment station, who has announced the appointment of W. W. Robbins, botanist in charge, and George E. Eggington, analyst and inspector.

Anyone interested can get complete information by sending for the bulletin above mentioned, from which the following is quoted:

Labeling Requirements

The act requires that all field seeds sold, offered or exposed for sale within Colorado for seeding purposes in the state in lots of 5 pounds or more shall be labeled. No particular form of label or tag is required. However, the label or tag must be attached to the outside of the container of the seed in a conspicuous place.

We are suggesting the following as a suitable form of label to use.

SEEDS

Kind.....Var.....
Purity..% Germ..% Date of test....
Grown in.....Locality.....
Noxious Weeds: Name and number per lb. of each in excess of 1 seed in 5 grams (or 90 seeds per lb.).....
.....
.....
Salesman .....
Address .....

The purchaser of seeds wants to know where the seed was grown. This is a particularly important matter in Colorado, where the agricultural conditions are so varied. The dry land farmer does not often care to use seed grown on irrigated land, or the high altitude farmer, seed grown at low altitudes. More attention needs to be given to the source of seed. • • •

Exceptions to Regular Label, and Exemptions

1. It is sometimes necessary that a seedsman replenish his stock during the seeding season. Such seed need not indicate the percentage of germination, but must be labeled "Emergency." All other items of the regular label, except percentage of germination, must be given. The Agricultural Experiment Station must be notified of the date when an emergency shipment was received and he furnished with a copy of the bill of lading.

2. Any person selling agricultural seeds directly to seed merchants must provide such seed with a label indicating (a) the commonly accepted name of such field seed, and (b) the state or foreign country where the seed was grown, and if in Colorado, the locality. The other requirements of the regular label may be omitted, if so desired.

3. No label is required when the seed is being shipped to a general market to be cleaned or graded before being offered or exposed for sale for seeding purposes.

4. No label need be attached to field seed held in storage for the purpose of being cleaned.

5. Seed held or sold for shipment outside of Colorado only, need not bear the regular label, but in case the regular label is not used it must be marked "Not Clean Seed" or "Not Tested Seed."

6. Mixtures of field seeds prepared for special purposes must be so labeled. The label must contain all the items of the regular label, as provided for in subdivisions 2 to 6 of Section 2.

7. Seed held or sold for food purposes need not be labeled.

Free Tests by Seed Laboratory

The act provides that any citizen of Colorado, or any person shipping seed into Colorado for seeding purposes in the state may send samples to the seed laboratory of the Agricultural Experiment Station for test and analysis, subject to such rules and regulations as may be adopted by the seed laboratory. The tests and analyses will be made free of charge until further notice. However, it is necessary that the seed laboratory protect itself from an excessive number of samples from any one person or firm in a given period of time. Accordingly, we cannot promise more than 25 purity tests and 50 germination tests per month for any one person or firm. • • •

Inspection

Section 6 of the seed act requires that the "Colorado Agricultural Experiment Station shall inspect, examine and make analyses of any test seeds sold, offered or exposed for sale in the state, at such times and places and to such extent as it may deem necessary." The Experiment Station may appoint its agents to carry out these provisions, and these agents shall have free access to warehouses, elevators or the premises of railroad companies for the purpose of taking samples. In all instances, the inspector will tender payment for the samples of seed taken, at the current price. Samples will be taken according to rules recommended by the Association of Official Seed Analysts of North America. These methods insure a fair and representative sample. Duplicate samples are taken; one is left with the owner of the seed, the other taken by the inspector for analysis. Both samples are sealed. The owner of the seed is at liberty to accompany the inspector when the sampling is done and the samples are sealed. • • •

How the Law Affects the Farmer

1. The provisions of the seed act apply to anyone selling seed for seeding purposes in quantities of 5 pounds or more. This means that a farmer must label seeds sold to another farmer. This need not work a hardship, for any farmer may have his seed tested free of charge by sending a sample to the seed laboratory. Many farmers will take advantage of this privilege and work up a reputation for producing seed of high quality, guaranteeing it by means of the label attached. While it is true that few farmers will knowingly sell their neighbors seed running high in weed seeds or low in germination, there is but one sure way to know, and that is to have the seed tested.

2. Exceptions to the regular label, as given on a preceding page, apply to a farmer as well as to seed merchants.

3. Any farmer may receive any and all circulars, bulletins or reports issued by the seed laboratory by requesting them.

4. Any farmer may send samples of seed for testing to the seed laboratory, Fort Collins, colo. Tests are made free of charge.

Potato Grades Adopted

The present prospect for a record-breaking crop of potatoes this season, the general situation with regard to food supplies, the overtaxed condition of the transportation facilities of the country and the recent ruling of the Federal Reserve Board that member banks are authorized to make loans against warehouse receipts for potatoes, properly graded, packed, stored and insured, emphasize the importance of adopting uniform grades for this product.

For several years the Bureau of Markets of the United States Department of Agriculture has been investigating and demonstrating the practicability of marketing potatoes by grade. This work has been conducted in most of the principal producing sections of the country and has consisted of field tests in the grading and packing of potatoes and experiments in the marketing of the graded as compared with the ungraded product. The results show conclusively that the marketing of potatoes by grade is desirable, practicable and economical.

The Department of Agriculture and the United States Food Administration jointly recommend and urge the adoption of the following grades, which, in their opinion, will meet the needs of the Federal Reserve Board, as well as those of growers, dealers and consumers:

U. S. Grade No. 1

This grade shall consist of sound potatoes of similar varietal characteristics, which are practically free from dirt or other foreign matter, frost injury, sunburn, second growth, cuts, scab, blight, dry rot and damage caused by disease, insects or mechanical means. The minimum diameter of potatoes of the round varieties shall be 1⅞ inches, and of potatoes of the long varieties 1¾ inches. In order to allow for variations incident to commercial grading and handling, 5 per centum by weight of any lot may be under the prescribed size, and, in addition, 3 per centum by weight of any such lots may be below the remaining requirements of this grade.

U. S. Grade No. 2

This grade shall consist of potatoes of similar varietal characteristics, which are practically free from frost injury and decay, and which are free from serious damage caused by dirt or other foreign matter, sunburn, second growth, cuts, scab, blight, dry rot or other disease, insects or mechanical means. The minimum diameter shall be 1½ inches. In order to allow for variations incident to commercial grading and handling, 5 per centum by weight of any lot may be under the prescribed size, and, in addition, 5 per centum by weight of any such lot may be below the remaining requirements of this grade.

Pinto vs. Tepary Bean

What do you know about tepary beans? Is it true that they mature much earlier than the pinto beans? If so, why not grow them instead of the pintos?

This question comes from an Eastern Colorado subscriber. Similar questions have been answered by letter a number of times during the past few months. It is not advisable to grow tepary beans on a commercial scale in any section where a good yield of pintos can be made. The principal reason is that the pinto is a better market bean. The tepary is a much smaller bean and, tho white in color, does not possess as desirable qualities for the table as the pinto. It has been much advertised by seed houses in an effort to create a demand for the seed. Extravagant claims are being made for it.

It is not a new variety, having been grown for many years in the arid regions of the Southwest, notably in Arizona and Old Mexico. Because of its drouth resistant qualities it will make a crop in sections having an average rainfall of only 10 inches a year.

Under average dry farming conditions, however, it is not as profitable a crop as the pinto bean nor as desirable one from the consumer's standpoint. The market for pintos has been established, and it is an economic mistake to seek to introduce an inferior bean in competition with the pinto.

Tests have been made with the tepary bean at the Hays, Kan., experiment station, under dry farming conditions. The following report received by Western Farm Life from Robert E. Getty, scientific assistant at that station, indicates just the contrary of the claims made for the tepary on the point of quick maturing qualities, showing no advantage whatever over the pintos in that respect:

"'At Hays we have been testing tepary beans for four years now, but the present season is the first for definite tests of pinto beans. Tepary beans have taken from 100 to 120 days to mature at Hays; they usually barely mature before frost. Their seed yield was nothing in 1916, and from two to ten bushels per acre in the plots of the two preceding years. We do not notice any special tendency to shatter more than any other bean variety. We do not recommend the tepary bean much in Western Kansas, and I doubt whether it would be any better in Colorado. It seems better adapted to long, hot, dry seasons, such as prevail in Arizona and the Southwest in general.

"I believe you are entirely right in pushing the pinto rather than the tepary bean for your territory. As the pinto bean is new to this region around Hays, we are advising our farmers to go slow on it till they understand the crop. We do not expect pinto beans to be as valuable here as your Colorado growers have reported them. Our pinto beans were much hurt by drouth up to August 5th this year, since which time nearly six inches of rain have come, so as to start them growing well again."

Destroy Smuts

Cleanse all seed grains with Formaldehyde solution before planting as it positively destroys smuts, of wheat, oats, barley, rye, etc. It prevents scab and black-leg diseases of potatoes, also cucumber and onion rot and cabbage diseases, etc.

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The Farmer's Friend

Every farmer who is in business for big profits should use Formaldehyde, as it has the approval of the U. S. Dept. of Agriculture. Formaldehyde at your dealer, one pint 35 cents treats 40 bushels of seed. Our new Hand Book is free—write to-day.

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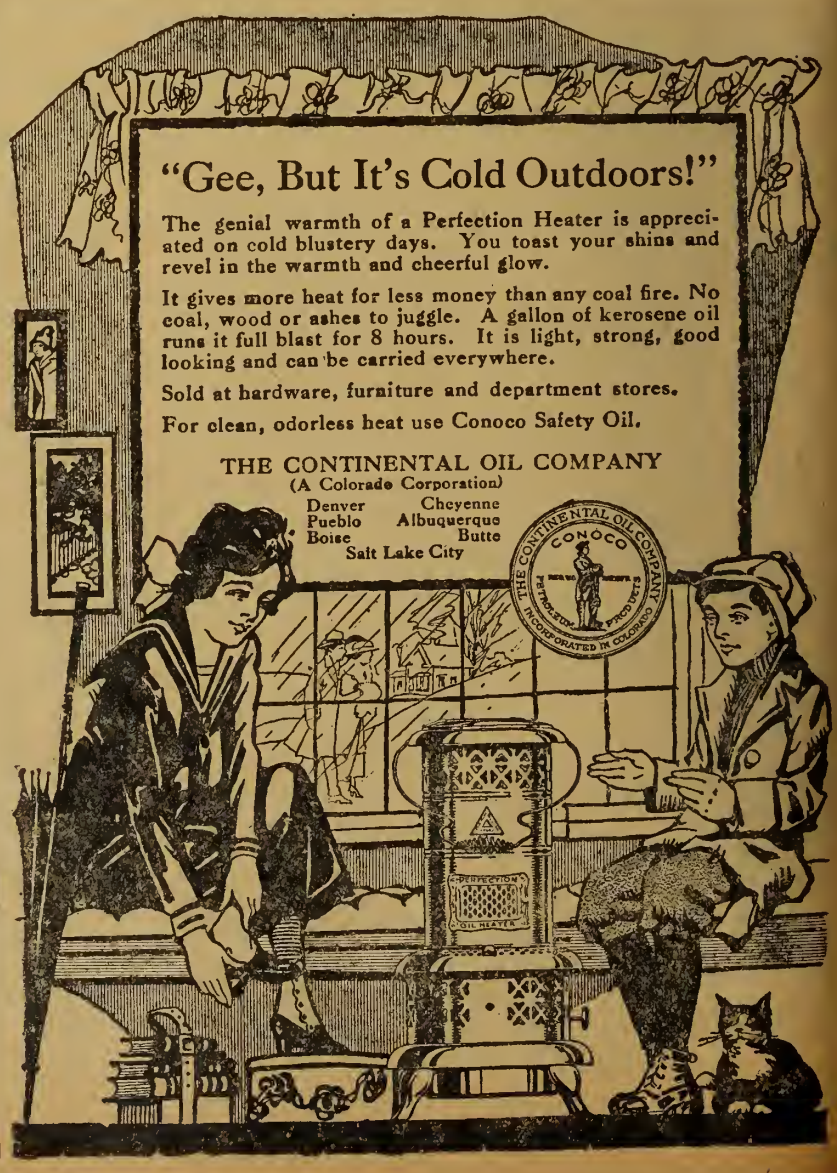

With the County Agents

Kit Carson County.—P. N. Flint, County Agent: The first three days of the week were spent with Mr. Clark on pit silo work. At all of the meetings, while there was no very large attendance, yet the interest in silos was keen. In addition to the meetings we visited three farms where silos were kept. One of these places was the Lester Beveridge ranch, where there are three fifty-foot silos built above ground and made of concrete.

Morgan County.—C. G. McCord, County Agent: Thursday was well spent on the silo project; a visit to a man who has two pit silos gave some interesting and reliable data to carry on to the next man; the only obstacle we find in the digging of many new silos is the pressure of work and shortage of labor; there is also a tendency to neglect the filling of silos, as the work crowds the farmers; some of our best silos were not filled last year because of a rush of work at filling time; we have found that the season of filling may be very much extended by cutting the corn and throwing it in piles somewhat larger than shocks and putting it in the silo later; instead of the silo filling time being a period of a week or two, it may be extended over at least six weeks in this way without loss of quality of silage; we are getting this information to our farm clubs in a systematic way and we think it will help some.

Pueblo County.—S. V. Smith, County Agent: The Bean Growers of Pueblo county were organized Saturday, August 18, at the Commerce Club. Reporters from the various sections of the county which have no farmers' clubs or granges were secured at the meeting to report conditions, acreage, probable yield, etc. In sections that are organized, the local organization will be asked to look after this work. The report will cover acreage, condition, probable yield, where threshers can be had, number of sacks needed, etc. It is thought that some saving can be made to the grower in buying sacks if arrangements can be made to buy them in large quantities. A fee of ten cents for the County Association in addition to the State Association fee of 50 cents was fixed at this meeting. Other matters discussed at the meeting were the co-operative buying of fruit from the western slope.

Rio Grande County.—E. H. Thomas, County Agent: Nearly all of the time this week has been devoted to the labor situation. Twenty-six men have been placed on ranches through this office during the week. The requests for labor have exceeded the supply during the past two days, and there are now on file 36 requests which call for nearly 50 men. By co-operating with County Agent C. E. Smith of Trinidad, considerable labor has been secured.

Adams County.—Geo. R. Smith, County Agent: A survey has been made of the bean acreage in the county. The report shows that there are 29 townships in which beans are grown quite extensively and 7 townships in which a limited amount are grown. There was an average acreage in the 29 townships of 628 acres with an average condition of 67 per cent. This made a total acreage of 19,212 acres of beans in the county, and a condition of 67 per cent, and from personal observations it was estimated at an average yield of 400 pounds to the acre, or a total of 7,684,800 pounds for the county.

La Plata and Montezuma Counties.—E. D. Smith, County Agent: Visited three demonstrators who are doing work in improved potato production by seed collection and treating.

Las Animas County.—Chas. E. Smith, County Agent; C. C. Taylor, Assistant County Agent: Tuesday, in company with Mr. W. E. Vaplon, State Leader of boys' and girls' clubs, held two demonstrations in plant selection under the "Bean Improvement" project. Attendance fairly good at each meeting and on the presentation of the plan to young and old, and on comparing good plants with poor ones in connection with simple talks on heredity, the remark was often heard, "I'm sure going to save some seed that way from my patch." In the evening attended a big pie social, at which Mr. Vaplon presented the boys' and girls' work.

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We have built this new Oakland Sensible Six to this idea, and we believe it more faithfully expresses it than any other car on the market.

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The overhead-valve motor in this new Oakland is simple and compact; it delivers at 2600 r.p.m., 44 horsepower, or one full working horsepower for every 48 pounds of car weight.

It is exceedingly economical of fuel, and in relation to the weight of the car is perhaps the strongest in the world.

The body of the car is very roomy and of exceptionally solid construction; it is swung on specially graded springs of great comfort, and is upholstered in genuine leather.

We know that the present market cannot equal Oakland value except at a considerable advance in cost.

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Western Farm Life

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Progress On Dry Lands

Reporting on crop conditions in San Miguel county, New Mexico, a month ago, M. R. Gonzalez, county agriculturist, says: "The summer rainfall has been about 80 per cent of normal and the distribution has been unfavorable. It is surprising when we figure the small amount of rainfall that we had and find that we can grow a crop under dry farming conditions. In one of our best dry farming districts we had only 8.12 inches of rainfall during the year and, notwithstanding this, we had much better crops there this year than last. As a whole, while we have had a dry year, we know positively that our farmers are much better prepared to combat the scarcity of food for man and beast this year than they were last. We have more corn, more wheat, more beans, more fruit and more hogs, and a large percentage of our farmers who bought seed last year, we find, will have seed for sale this year."

Better farming is the reason. Organized agriculture and the aid of competent field men now stand between the dry land farmer and failure in seasons of short rainfall. Let the good work go on.

✦ ✦ ✦

Grand County Fair

The people of Grand county are to be congratulated on the splendid county fair held at Kremmling the last week in September. I visited the fair both days, driving over from my ranch at Parshall, and found there an excellent showing of grains, grasses and root crops neatly arranged. There was one feature that particularly impressed me, and that was the quality of the exhibits. They showed every indication of careful farming. The fair was an eye-opener to visitors who had thot of Grand county only as a cattle country, too high for general agriculture. Aside from the agricultural products, which were housed in a new building erected this year, there was also a good entertainment program, including wild west exhibition, races and balloon ascension. The attendance was good. Fairs of this kind stimulate farmers to greater efforts and give the county favorable publicity, especially when they are so well managed and present so well balanced a program as was the case at Kremmling.—E. M. Ammons.

A Letter From France for Colorado Farmers

The following is a letter received from Mr. O. F. Gardner, the creator of the "War Acre," and former president of the Colorado Farmers' Congress, who is now at the front in France:

"Somewhere in France,"
Aug. 4, 1917.

War Acre Committee:

I wish I could write you freely and fully, but that is forbidden. Whether the war ends this year or not, and whatever may or may not be the food situation here, it is no secret to say that before the world can right itself from the awful catastrophe thru which it is now passing, it is bound to face suffering and want which will surpass that of even the present terrible hour. I sincerely hope that every farmer and stock raiser in the great State of Colorado will support, not only generously but enthusiastically, the War Acre move. It will not only mean a contribution which will hearten those who will sorely need it, but it will set an example which will be widely followed in the years which are just ahead. We ought not only to give to the limit of our capacity but we ought to plan to produce all that is possible, and to economize as a nation in our use of food and clothing.

A Princeton senior and several other college men have just been killed in their ambulances at the front. We will doubtless have to lose many more such. Their sacrifice and readiness for it means much at this hour, but the great thing which the world needs and will need, is that same spirit of sacrifice manifesting itself in every home in America in some practical and tangible way. Comparatively few of us will ever get into the first line trenches and there be able to give our lives, but every one of us, old and young, can manifest the same spirit, which takes men there. The Colorado farmers were the first to voice the food scarcity probability and I want them to set the standard for the world in their spirit for generosity and in the practical way in which they express it.

Faithfully,
O. F. GARDNER.

The committee hopes you will renew your efforts in behalf of the "War Acre."

CHARLES L. HOVER,
Chairman.

Progress of Food Administration

The following from Lou D. Sweet, president of the American Potato Growers' association and now a member of the United States Food Administration at Washington, will be of interest to Western Farm Life readers:

"The work here is progressing rapidly now. It was only August 10 when the bill became a law, creating the United States Food Administration. Since then the millers have voluntarily fixed the profit on a barrel of flour at 25 cents and the profit on a ton of feed at 50 cents. The sugar men have voluntarily set a price on sugar that will mean about 8 cents a pound to the consumer. The copper producers of the United States have set the price at 23½ cents a pound on copper during the fall, and the other day the steel prices were fixed reducing materially the prices that have existed for the last few months. You will be interested to learn that at a conference here on the 20th of carlot handlers of potatoes, with representatives from Maine to California, the grades for potatoes were adopted as set forth in the enclosed bulletin. Those present at the meeting were also favorable to buying potatoes on the hundred-pound basis instead of by the barrel, bushel and so forth, as has been done in several sections of the United States in the past. You will understand, of course, that this does not mean that barrel, bushel and so forth cannot be used, but the weight of the barrel will govern its price. This, I feel, is the longest step in advance ever taken in the United States for the uplift of the potato industry."

Note: Details concerning potato grades appear in another column of this issue.

✦ ✦ ✦

The Second Liberty Loan

There is now offered to the American people a new issue of $3,000,000,000 of bonds to be known as the Second Liberty Loan. They will be issued in such denominations and upon such terms that every patriotic citizen will have an opportunity to assist the government by lending his money upon the security of a United States government bond.

It is essential to the success of the war and to the support of our gallant troops that these loans shall not only be subscribed, but oversubscribed. No one is asked to donate or give his money to the government, but everyone is asked to lend his money to the government. The loans will be repaid in full with interest at the rate of 4 per cent per annum. A government bond is the safest investment in the world; it is as good as currency and yet better, because the government bond bears interest and currency does not. No other investment compares with it for safety, ready convertibility into cash, and unquestioned availability as collateral security for loans in any bank in the United States.

People by thousands ask the treasury constantly how they can help the government in this war. Thru the purchase of Liberty Bonds everyone can help. No more patriotic duty can be performed by those who cannot actually fight upon the field of battle than to furnish the government with the necessary money to enable it to give our brave soldiers and sailors all that they require to make them strong for the fight and capable of winning a swift victory over our enemies.

✦ ✦ ✦

Storage of Potatoes

The storage of potatoes can be accomplished most satisfactorily thruout much of the United States in the dugout pit or potato cellar in some of its various forms of construction, says a recently published Farmers' Bulletin of the United States Department of Agriculture, "Potato Storage and Storage Houses." While the dugout storage house is in most general use, concrete or masonry houses with frame superstructures are, perhaps, most satisfactory in cold climates. In some sections, especially in the South, where drainage is poor, insulated frame structures built entirely above ground must be depended upon.

The primary purposes of storage, it is pointed out, are to protect the tubers from extremes of heat and cold and from light. Account also must be taken of conditions of humidity and ventilation and of the size of the storage pile.

The temperature should be the highest at which potatoes can be maintained firm and ungerminated, and which will at the same time hold fungous diseases in check. Experiments of the department with artificially refrigerated storage indicate that 36 degrees F. is sufficiently low for all practical purposes and that in the earlier portion of the storage season a temperature of 40 degrees F. is just as satisfactory as a lower one, except where powdery dry rot infection occurs.

All natural light should be excluded from potato storage houses because when the tubers are exposed to even modified light, they are soon injured for food purposes. A practical rule in regard to humidity is to maintain sufficient moisture in the air to prevent the wilting of the tubers and at the same time to keep the humidity content low enough to prevent the deposit of moisture on the surface of the tubers.

If potatoes are piled in too large piles they may become overheated and deteriorate. Six feet is a good maximum depth to which to pile tubers in bins, and the area covered by each pile should be limited. A good plan is to insert ventilated division walls at intervals through the pile or bin. These may be made by nailing relatively narrow boards on both sides of 2x4 uprights, 1 inch spaces being left between the boards. General ventilation for the whole storage house usually is accomplished thru ventilating shafts in the roof.

The dugout pit or potato storage cellar is probably more widely used than any other type of storage space. Fitted with water-tight roof, it is especially popular in the central portions of the United States. In the arid and semi-arid sections a type with sod or dirt roof is in most general use. As a rule, the excavation for the cheaper structures of the dugout pit or cellar type when erected on level or nearly level land, does not exceed 3 feet. The soil removed from such an excavation, particularly if the dugout is of any considerable size, is ample for banking the side and end walls and also for the roof. The cost of construction may be greatly modified, according to the character of the location.

In the cheaper dugouts, where the soil is of such a nature as to remain intact, it is allowed to form the side and end walls, the roof being supported on plates resting on the soil and held together by boards or joists. This form of construction involves a deeper excavation and a constant element of risk from a cave-in. In the more expensive and substantial structures the side and end walls are built of concrete.

When made into apple butter, even the ugly windfall has a glory of its own.

Fly a flag on the farm and teach the children what it stands for.

Comment by Farmer Putnam

OUR MISSOURI FRIEND REPORTS HIS INTERVIEW WITH A COW ON THE VALUE OF ENSILAGE

WHILE the government is buildin' ships and the soldiers is diggin' trenches to win the war, I'm a thinkin' us farmers kin do our share by buildin' silos. You people maybe don't think about the danger of this war, but it ain't no joke when I tell you that if we don't put a crimp in them Germans they'll be over here and at us when they git thru in Europe. I'm advocatin' pit silos, first because we want to store the feed, increase the milk flow, cut down the grain feed in makin' beef and save 90 per cent of the corn crop 'stead of lettin' the wind blow most of it away in the shock. Second, I got some private advice from the government about this silo business that I'm goin' to tell you-all.

We need a pit silo on every farm and then if they is such a thing as the Germans comin' over here by and by, why we got our bomb proof already dug and all we got to do is to retire to the silo, put a periscope in the top of it and tell 'em to fire away. I seen where one of them professors at Fort Collins calls the pit silo the farmer's submarine and it is, alright. Of course most of us will want to fight if they come and fur such as feels that way, they can put their families in the pit and stand off the army with a gun.

I got my pit silo all dug and she's forty feet deep, with a false bottom half way up. I hain't takin' no chances in this here war and I'm goin' to make myself purty hard to ketch if the enemy comes over this way.

This kind-a reminds me of a little tussel I had one time when I was tryin' to find out somethin' about silage direct from the cows. I heard them professors tell about it, but I sez to myself: How about gittin' this evidence right straight from the party that has to eat the silage? So I went out to a ranch and sez to the farmer, I'd like to poke around in the cowlot and find out somethin' and he sez: Alright, I guess you cain't do no damage. So I climbed over the fence and seen a sorrel cow leanin' up ag'in the fence chewin' her cud. On lookin' closer I seen there was tears in her eyes and so I sez, pretendin' to be friendly:

Well old gal, what seems to be the matter?

I don't know as it's any of your business, she snaps.

Oh come now, stop your weepin' and confide your troubles to a kind hearted old Missouri farmer.

Cow: You do look soft hearted and soft headed alright and I'm sure glad to see somebody take a interest in a hard workin', respectable cow.

Me: Well, I don't usually take as much interest in she stuff as I do in steers.

Cut out that she stuff, she sez, I'm a lady and don't like to be referred to so disrespectful like.

I begged her pardon and asked her to excuse my blunt way of talkin' but that was the Missouri way, and I sez, now tell me why was you weepin'?

Cow: You see it's this way. My master dug one of them there cement feed tanks, silos they call 'em. Me and Josie and Jim and the rest of the stock watched the darn thing—excuse my slang, I picked that up in the Denver yards when I was comin' thru—and we had a good deal of fun guessin' what it was to be. Jim said it was one of them artesian wells; Josie said she knew better, it was a cyclone cellar and I kept a wise look on my face and said I knew it was some kind of a new feedin' thing-a-majig, or a milk well, with a pipe runnin' from the milker right down into the tank, and a pipe line direct to the creamery, to save skimmin' and haulin'.

Well I come near bein' right. It was a feed tank alright and when the corn was ripe the master had it all sliced up fine like kraut and then they put it into the tank. I told Jimmie I bet it was fur us to eat and he said I was crazy, and what's more' he wouldn't eat the darn truck nohow. He said he wasn't come to a point yet where he had to take chicken feed. He was a purebred Shorthorn and he'd be hanged if he'd eat hash. I told him I bet he'd be glad to have it when winter come. I was right, fur when winter come and Jimmie smelled the stuff he couldn't git enough of it and, you never seen a steer swell up like he did. Poor Jimmie, he's dead now. They put him on the train one day fur Denver, fatter'n a peanut fed possum.

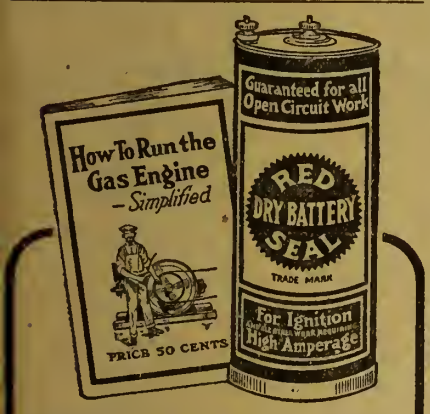
The poor old cow broke down and cried and I suspected that she was in love with Jimmie, so I sez:

Well don't cry, Jimmie died like a man anyhow.

Huh, she sez, that ain't what's makin' me cry. Jimmie was a good caff alright, but he went the way of all beef stuff and helped to make the Armours rich. So wipin' her eyes with her left hind hoof she went on with her story:

After they filled up the tank with the stuff Jimmie called hash they let it alone fur about three weeks and when the first cold spell come and we couldn't go out in the pastur' we seen our mangers full of the funniest lookin' greenish yellow stuff that I ever laid eyes on. Jimmie had his head

(Turn to page 16)



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IT takes a pull of 218 pounds on your team to get a 1-ton load over the road on the left, when you can get over it at all. In wet weather you can't get over it at all; even in dry weather it is rough and dusty. On the right, where the road has been paved with concrete, it takes a pull of only 28 pounds. It never takes more than that in the worst kind of weather—winter or summer—because it is hard, clean and even.

Which Road Do You Want?

Tests showing how many pounds in pulling power per ton of load is required on various types of road surfaces were made for the Good Roads Bureau of the California State Automobile Association by Prof. J. B Davidson, Division of Agricultural Engineering of the University of California. They are summarized as follows:

	Pounds
Over a level, unsurfaced concrete road	28
Concrete base, ⅜-inch skin top asphaltic and screenings	49
Waterbound macadam, level, good condition	64
Concrete base, 1½-inch Topeka top, level, good condition	68
Gravel road, good condition, level	78
Earth road, fine dust, level	92
Earth road, stiff mud on top, firm underneath, level	218
Loose gravel, not packed down, new road, level	263

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Moderate Cost

Big difference, isn't it? You pull on a concrete road, where you pull against an unimproved, rough or boggy surface. Where one wastes power, the other saves. Power costs money, whether you feed a team or buy gasoline. Your saving in power will pay your share of the cost of a concrete road.

Be sure you know what a concrete road is. Concrete is made of portland cement, sand and pebbles or crushed stone, and water. It is hard and durable. Concrete is the material used in dams, factories, bridges, and big engineering works like the Panama Canal requiring great solidity and strength.

While you are thinking this matter over, write us for Bulletin 136. It will help you decide the matter in a way that will cost you less—everything considered—than the old type of road is costing you now.

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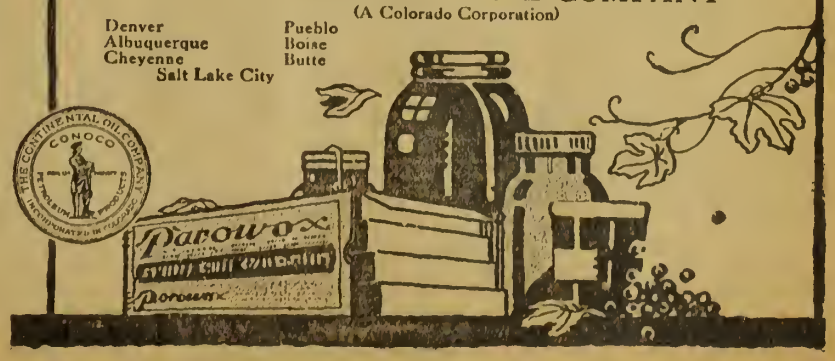

Dairying and Hog Raising

GEO. E. MORTON

Free advice on the commercial or technical features of dairy farming and hog production. Please address your letters to DAIRY DEPARTMENT, WESTERN FARM LIFE, DENVER, COLO.

Mr. Dairy Farmer, did you save the dairy column from the issue of October 1, which contained the opening article of the series on breeding and feeding of dairy cattle by Professor Morton? If not, send a 2-cent stamp. We have a few extra copies on hand and will send them out to subscribers for a limited time for the cost of postage alone, as we want you to preserve for future use the entire series of these articles. The second article, which takes up "Control of Inheritance and Variation," appears in this column. Ask questions to bring out new phases of the subject. Address your inquiries to Dairy Department, Western Farm Life, Denver, Colo.

Breeding Dairy Cattle

Article II

II. Control of Inheritance and Variation.

Intelligent selection is the one great means of control. Selection has given us practically all of the best plant varieties and animal breeds used by man. Occasionally something is found, ready-made in nature, suitable for our use, but these are always improved by selection. Selection resulting in improvement is based upon many things, but first of all it is based upon good judgment—and that is one of the rarest things in the world. The "stock-sense" or instinct to do the right thing with livestock, is born into a man, not trained into him. The man who doesn't love his animals, who needs to be told not to mistreat them, who has to be warned to stay up with them when they are sick, may be trained to clean out a barn with a shovel, but he will never know stock.

It is the same in every walk of life; the man who needs a blue-print and a guide-book for every simple operation he stumbles over, is a never-ending irritation to the employer who is looking for a little resourcefulness and a little flash of common sense now and then. But that is beside the question. The emphasis now is on the fact that good judgment gives you your ideal of selection, enters into the selection of the females of the herd and the herd sire after a study of both pedigree and individual, and tells you how close to breed and when to discard.

You cannot have judgment with regard to stock unless you know stock. Judgment is based on wisdom, and wisdom on knowledge and experience. Seize every opportunity to learn more about the class of stock you are working with and, having learned, exercise your judgment.

Selection can do three things for you: It can eliminate the undesirables from reproduction; it can reduce variation to the extent of not over 10 or 15 per cent, and it can result in an absolute advance in quality of stock. Present ideals of selection as held by the average dairyman are very simple. They consist of a desire for a good-looking bull; a knowledge that pure blood breeds on so that a purebred sire is desirable, and that by selecting heifers better than their dams, the average milk production of the herd can be raised. So far, so good. But a bull doesn't always breed like he looks—not even when he is purebred. And some pretty good-looking heifers are occasionally poor producers. We must go a step farther. The sire has no more influence on the offspring than has the dam, if the blood lines of the two are equal. And on the average only 50 per cent of the characteristics of offspring are determined by the parents, 25 per cent being determined by the grandparents, 12½ per cent by the great-grandparents, and so on.

Now do you see why pedigree is valuable? It is necessary that the calves you breed shall have not only a good sire, but also a good great-granddam. The quicker you learn this the farther you will go in the breeding business. Do not pick a sire on his individuality alone. Learn to know pedigrees. Subscribe for a good dairy paper and read everything in it about the breed of cattle you are working with. Read the advertisements and learn what families of cattle are making good. You cannot buy a sire intelligently unless you know his ancestors and their reputation among breeders.

More than this, while pure blood is usually a guarantee of reasonable uniformity of ancestry, there are purebred scrubs and purebred nonentities. By picking a bull who not only is purebred but has a well-bred dam with a large record, and is by a sire who in turn is by a noted sire and out of a large record dam, you will get something worth far more than a bull who is merely purebred. Such a bull costs more money. Yes. But how much is it worth to you to have an increase of fifty pounds of butterfat per year from each heifer in the herd over the amount her dam gave? With twenty heifers it would make the bull worth around a thousand dollars, wouldn't it? And if a bull can produce daughters giving a thousand pounds of butter in a year when the average yield over the country is under one hundred and fifty pounds, $25,000 or $50,000 isn't such a fanciful figure, after all. Men who pay good prices for bulls expect to get their money back. They have a reason for paying out money that is theirs. And it is up to you as a breeder to find out that reason.—G. E. M.

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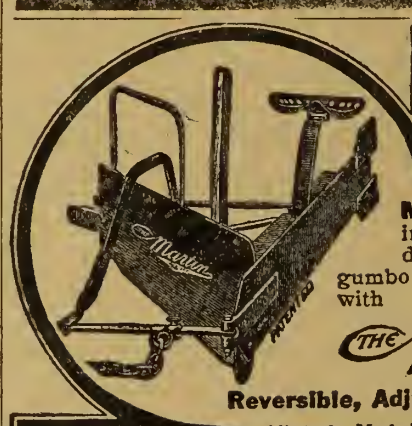

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Late Sowing of Winter Wheat

I would like to know if winter wheat would do all right that was seeded very late, say in December or just before the ground would be apt to freeze. It has been very dry here and wheat put in the ground now would not sprout until a good rain. I have been told that if conditions are not favorable for planting in August it is best to put it in late, so there is no danger of sprouting until spring. It seems to me there would be less danger from winter killing if it was put in late.—G. H. J., New Raymer, Colo.

Late sowing of winter wheat increases the danger of winter killing, because the plant does not make a good root development before freezing weather and consequently is easily killed or blown out. Seeding as late as December is entirely out of the question. If the seed lived thru the winter without sprouting you would get a very thin stand. Moisture is absolutely necessary to make a crop of winter wheat. If you haven't got it in your soil at seeding time and it does not come later you can't expect a crop. In your section the best time for seeding is from September 12th to about October 15th, early seeding being preferable, but not as early as August, because if sown too early the wheat sometimes joints in the fall and then is easily winter killed.

City Garden Advice

All of a sudden the cabbage moth has broken loose and I must do something to save my cabbage from the worms. I used to sprinkle with boiling water; don't like it very well, tho good; know about wood ashes, alum water, etc., and kerosene emulsion. Can you recommend something simple and efficacious?

My peas, beans, melons, etc., are beautiful and thrifty but producing almost nothing. Peas and beans also melons blooming galore for a month past but not setting melons. Can you suggest cause or remedy?—J. O. C., Pueblo, Colo.

Dusting the cabbage plants with lime often proves effective. Arsenical sprays are used by gardeners when the plants are quite young. On older plants hellebore is often used with success, as it is a vegetable poison and not injurious to the foliage. Under separate cover we are forwarding a bulletin on Insects and Insecticides issued by Colorado Agricultural College. On page 45 you will find detailed information concerning the use of hellebore. Catch the moths in a net and destroy them.

It is too late in the season to remedy the condition which you complain of in your garden, namely, all vines and no fruit. "This may be due to lack of fertility in your soil, or to too much irrigation of the surface, with shallow rooting of the plants. Begin this fall on next year's garden and you may have better results. Apply well rotted stable manure to the ground this fall and then spade it ten or twelve inches deep, leaving it in a rough state all winter. Next spring spade it again and work into a good mellow seedbed. Send to the State Experiment Station at Fort Collins for copy of Bulletin 199 on Vegetable Growing in Colorado and read carefully the directions concerning irrigation on page 4.

Stallion Owner Protected

I would like a little information regarding the stallion laws of this state. I have a purebred licensed stallion. A party comes seventeen miles to breed. I bred the mare in the evening and then again the following morning. Three weeks later he writes that it is too far to come and that he is going to turn the mare on the range to a scrub stallion. Does the state law protect a stallion owner in a case of that kind?—S. M. R., Washington Co., Colo.

The owner of the stallion licensed under the state law has a lien on the get of such stallion. If the scrub stallion referred to is not licensed, then the owner of such stallion would be violating the law in permitting service. The following is a quotation from the law governing the case: "The owner or owners of any licensed stallion or jack shall have a lien upon the get of any such stallion or jack until the service fee has been paid, and it shall be unlawful to sell or dispose of or remove from the county any colt upon which the owner of a licensed stallion or jack has a lien as provided for in this section, without the written consent of such owner, nor shall any mare served by a licensed stallion or jack be sold or removed from the county prior to payment of service fee without the written consent of the owner of stallion or jack which served said mare."

Green Worms in Cabbage

How can I best prevent the ravages of green worms which at this season are numerous on cabbage and some other plants? Also I find a small white maggot destroying most of the onions in this vicinity, working in the bulb just above the fine roots. Can this be prevented?—F. L. C., Routt Co., Colo.

The green worms on cabbages, cauliflowers, etc., may be killed by dusting or spraying with arsenate of lead (do not use this poison on cauliflower), or by thoroly spraying with a strong tobacco decoction such as "Black Leaf 40," in the proportion of one part to 800 parts of water. I cannot give you any practical remedy for the maggot in your onions, radishes, etc., except that of pulling and destroying infested plants.—C. P. Gillette, State Entomologist.

Regarding Private Road

I would like some information in regard to a road. About three years and a half ago I filed a homestead on forty acres of land and the county road runs thru it and a coal mine has a road that goes up a canon to their property. This road cuts off about two hundred feet by two hundred yards of my forty. They cannot get to their mine by any other route. What I want to know is, can I put gates on this road or do I have to fence a line for the mine? This road was there when I filed on the property and has been in use about nine years continuously. Can I make them pay for the fence?—M. L. M., Durango, Colo.

As this road was in existence before you filed on the land and is the only means of reaching the coal mine, you cannot close it. Whether you could put gates across the road would be largely a question of argument between yourself and the coal company. If you made any attempt to close the road the company could take the matter into court and have a right-of-way condemned for a road. However, you are under no obligations to fence a lane for the use of those going to and from the mine. Whether you can make them pay for such fence is also a matter of consideration between yourself and the coal company.

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Made from KEYSTONE COPPER STEEL—highest quality and most rust-resistant galvanized sheets manufactured for Culverts, Flumes, Tanks, Silos, Roofing and Siding.

Actual service tests have proved the superiority of APOLLO-KEYSTONE for all purposes where long service and resistance to corrosion are factors. Look for the Keystone added below the Apollo trade-mark—it indicates that Copper Steel is used. Apollo Roofing and Siding Products are strong, durable, fireproof and reasonable in cost. Sold by weight by leading dealers everywhere. Send for a free copy of our "Better Buildings" booklet, giving full information and building plans of great value to every farmer and owner of buildings.

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Manufacturers of Hollow Tile Silos and dealers in Hollow Tile Barns, King's system of ventilating, Hinman Milking Machines, Steel Stalls, Litter Carriers, Ensilage Cutters, Hay Tools, Hay Carriers and Slings, Barn Door Tracks.

All Farm Animals Need And Crave CAREY-IZED Stock Tonic Brick

Your hogs, cows, sheep and horses "take their medicine" voluntarily, eagerly, regularly, when you place it before them in the form of Carey-ized Stock Tonic Brick. You do not have to force it down their throats, or starve them to make them take it in their feed. They will absolutely take care of their own health with no bother to you whatever. Just place Carey-ized Stock Tonic Brick in the feed lot or troughs where animals can have access to it all the time—they do the rest.

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Carey-ized Stock Tonic Brick is made up according to a formula scientifically worked out by chemists of highest standing. It is more than a specific for some particular ills. Its purpose is To Prevent All Disease—to keep the animal system in such vigorous health that it repels all attacks of disease germs of every description.

Carey-ized Stock Tonic Brick is a combination of powdered gentian root, sulphate of iron, bi-carbonate of soda, sulphur, carbonized peet, quassia, charcoal and pure dairy salt. Contains absolutely no harmful substance—animals can't eat too much of it.

These ingredients, properly proportioned, constitute an unfailing worm destroyer and conditioner, keep stomach and bowels in order, aid digestion, promote healthy activity of kidneys and liver, purify and invigorate the blood.

Carey-ized Stock Tonic Brick has stood the severest feeding tests by leading stock raisers, and has the unqualified endorsement of high veterinary authorities. Let us give you the names of enthusiastic stock feeders whose hogs and other animals have been saved from disease and death by this great health medicine.

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We positively guarantee Carey-ized Stock Tonic Brick to be and do all we claim for it and we want you to verify our guarantee by your own experience and entirely at our risk. Order a dozen or more Carey-ized Stock Tonic Brick from your dealer; let your live stock have free access to it for 30 days. If you are not satisfied with the result, return what you have left and get all your money—no charge for what you have used. We stand behind our dealers with our guarantee.

If your dealer does not handle Carey-ized Stock Tonic Brick write us his name and we will see that you are supplied.

Fill out and mail us the coupon or write us a postal, and we'll send you full information and valuable booklet "Making Live Stock Pay."

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Animals given Carey-ized Stock Tonic Brick thrive better on less feed—saves feed money. It aids digestion.

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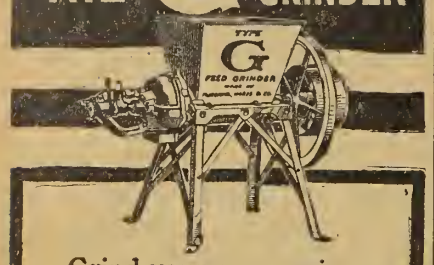
WITH THE "G" FEED GRINDER



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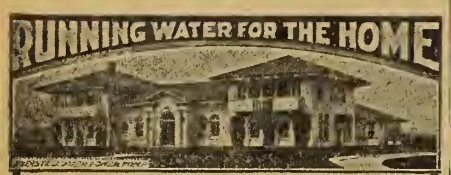

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Stop lugging water buckets long enough to sit down and write us about these wonderful labor saving MYERS PUMPS.
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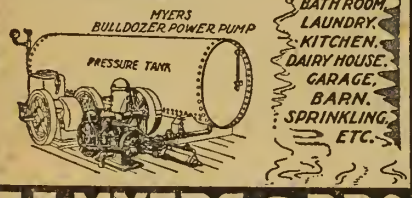

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300 Candle Power
FREE
To Try In Your Own Home

Turns night into day. Gives better light than gas, electricity or 18 ordinary lamps at one-tenth the cost. For Homes, Stores, Halls, Churches. A child can carry it. Makes its light from common gasoline. No wick. No chimney. Absolutely SAFE.

COSTS 1 CENT A NIGHT

We want one person in each locality to whom we can refer new customers. Take advantage of our SPECIAL FREE TRIAL OFFER. Write today. AGENTS WANTED.
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143 Factory Bldg., Kansas City, Mo.

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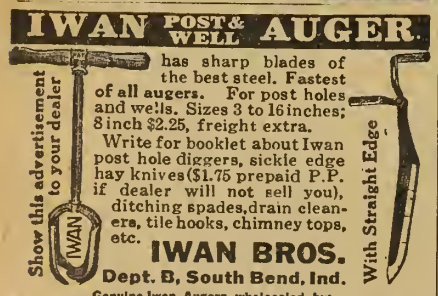

has sharp blades of the best steel. Fastest of all augers. For post holes and wells. Sizes 3 to 16 inches; 8 inch $2.25, freight extra.

Write for booklet about Iwan post hole diggers, sickle edge hay knives ($1.75 prepaid P.P. if dealer will not sell you), ditching spades, drain cleaners, tile hooks, chimney tops, etc.

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Genuine Iwan Augers wholesaled by: Moore Hdw. & Iron Co., Denver; Holmes Hdw. Co., Pueblo, Col.

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They last twice as long as all-leather, rubber or wood-soled boots and shoes.

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Best leather uppers. Thick felt insoles. No metal touches you. Warm, comfortable, easy to walk in. Keep feet in good condition and prevent sickness. Best by test for all work in any weather.

MONEY BACK if shoes do not meet with your approval. Write for FREE catalog which shows styles, gives prices and tells how to order. A postal brings it.
OVERLAND SHOE CO., Dept. 52 B, Racine, Wis.

Veterinary Inquiries

The following questions on veterinary subjects are answered by the Veterinary department of Colorado Agricultural college:

I have a male colt two months old which has a rupture about half as large as a hen's egg. The rupture is at the navel. I would like to know how I can cure this.—E. M. P., Deertrail, Colo.

A navel rupture on a colt two months old should not be interfered with. In all probability it will disappear by the time the colt is two years old; if not, there is then time to operate.

Complication of Diseases

I have a mare I bought two years ago this spring, heavy with foal, age about 10 years. She was in fairly good shape up till foaling. The colt lived 24 hours and the mare has gone down ever since. Had her on alfalfa pasture last winter. She has not been worked to speak of. She has an awful time breathing when it turns cool, but she gets relief when she discharges a quantity of mucus at nostrils. She has a discharge on left shoulder blade about 12 inches above flank and is awful thin. Would like to know what this is.—C. P. O., Kendrick, Colo.

The mare appears to be suffering with a complication of diseases, all of which may result from the fistula on the withers. The brief description given suggests strangles, glanders, pyemia resulting from absorption of infectious material from the fistula, heaves, or general impoverishment from bad condition of teeth. Only the wildest kind of a guess is possible in this instance. Please describe the condition more accurately.

Russian Sunflowers Prove Excellent for Ensilage

(Continued from page 5)

and yet it is just as partial to good land as any other plant.

During the past season we had a chance to observe other crops growing on land where sunflowers were grown last year. One plot on which sunflowers were produced last year was sown to wheat this year. In the same field, and adjoining the sunflower plot, was a piece of ground on which corn grew last year. This also was in wheat this year.

Grain Following Sunflowers

People driving by were often heard to remark at the difference in the size of the wheat in that field, many laying the heavier crop to the fact that that portion of the field had been heavily fertilized. It evidently was, but not in the manner in which they supposed. No part of this field had had a covering of manure, but where the sunflowers grew last year the wheat was at least a foot taller and had stooled much better.

Another plot of five acres was in corn and sunflowers last year. This year the entire plot was planted to corn and on the ground on which sunflowers grew last year the corn is taller and has a better color and thriftier appearance. So we are led to believe that it must feed upon some soil constituent different from that necessary for the growth of either corn or wheat. Who knows but what it may become a rejuvenator for old wornout corn and wheat lands?

Farm Crops Matured Without Summer Rainfall

(Continued from page 3)

Barnes, Dana Hawthorne. Rye in sheaf, Frank Johnson. Alfalfa in sheaf, G. B. Hampton. Sudan grass in sheaf, J. O. McVey, Dana Hawthorne. Feterita, Charles Smith, Dana Hawthorne. Cane, J. O. McVey, Arthur McGill.

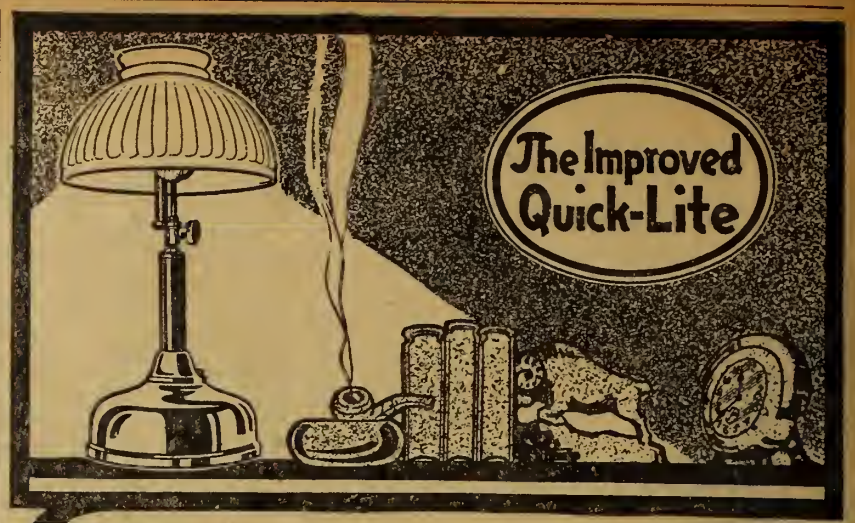
White potatoes, Mrs. Laws, I. Rosenberg. Red potatoes, Mrs. Laws, E. E. Baird. Sugar beets, Charles Smith, E. Gregg. Carrots, Charles Smith. Onions, Charles Smith. Cabbage, William Reed, B. Preston. Pumpkins, Mrs. S. J. Fryar, William Musgrave. Hubbard squash, Mrs. S. J. Fryar. Winter squash, H. D. Porter. Largest cucumber, Arthur McGill. Cucumber, table use, Mrs. S. J. Fryar, Arthur McGill. Cantaloupe, H. D. Porter, E. Schweizer, William Musgrave. Tomatoes, Mrs. Laws, Emil Schweizer. Pickling tomatoes, D. L. Prescott. Best garden assortment, E. B. Jacobs, H. D. Porter. Largest stock beets, August Denes. Largest sunflower, Dana Hawthorne, J. O. McVey.

Fancy work: Drawnwork, Mrs. E. B. Jacobs, Mrs. Charles Smith. Tatting, Mrs. George Peterson, Mrs. E. B. Jacobs. Crochet yokes, Lillian McVey, Mrs. H. D. Porter. Novelty list: Caps, Mrs. H. D. Porter. Tie, Mrs. George Peterson. Baby layette, Mrs. Prescott. Collar, Mrs. D. D. Kagy. Table runner, Mrs. Roxie Porter, Mrs. D. D. Kagy. Pillow slips, Mrs. H. D. Porter, Romaine McVey. Centerpiece, Mrs. Preston, Mrs. Prescott. Woolen shawl, Mrs. Preston. Quilt, Mrs. D. D. Kagy, Mrs. C. Shay.

Canned vegetables, Mrs. Porter. Pickles, Mrs. Hawthorne. Canned fruit, Mrs. H. D. Porter. Jelly, Mrs. J. J. Porter.

Dark layer cake, Mrs. Claude Neville. White layer cake, Mrs. H. D. Porter.

Judges for the fancy and domestic science departments were Mrs. L. A. McBriain, Miss Theo Leitz and Mrs. C. L. Smith. Miss Romaine McVey served as clerk.



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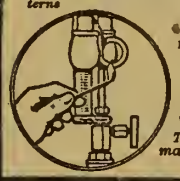
—a Match-Lighting Gasoline Lamp

AFTER years of experience in manufacturing the popular Air-O-Lite gasoline lamps and lanterns we now offer the **Coleman Quick-Lite** as the most advanced, most pleasing, most economical and most brilliant light in all the world. The objection to gasoline lamps heretofore, the need of a torch to light, is now entirely done away with. You light the Quick-Lite with an ordinary match without trouble or bother.

The Quick-Lite **makes and burns its own gas** from ordinary gasoline, giving a brilliant, steady, white light of

300 Candle Power —mellow and cheerful, restful to the eyes, yet more light than **20 oil lamps.** Brighter than the brightest electric bulb, safer than the safest oil lamp, cheaper than the cheapest candles. Absolutely free from flicker, dirt, grease, smoke or soot. No bothersome wick to trim. No globe to wash. Simple and easy to handle. Fuel can't spill. No danger if tipped over.

The illustration below shows the new patented coil which makes the Quick-Lite different to and superior to all other lamps and lanterns



THE QUICK-LITE LANTERN Lights with a match, giving a brilliant light of 300 candle power, brighter than any other lantern. Simple, clean, easily operated. No smoky wicks to trim, no chimney to clean or break. Nothing to get out of order. Can't spill; can't explode; can't blow out; no danger if tipped over. Always ready for use. **Guaranteed 5 years.** Lasts a lifetime.

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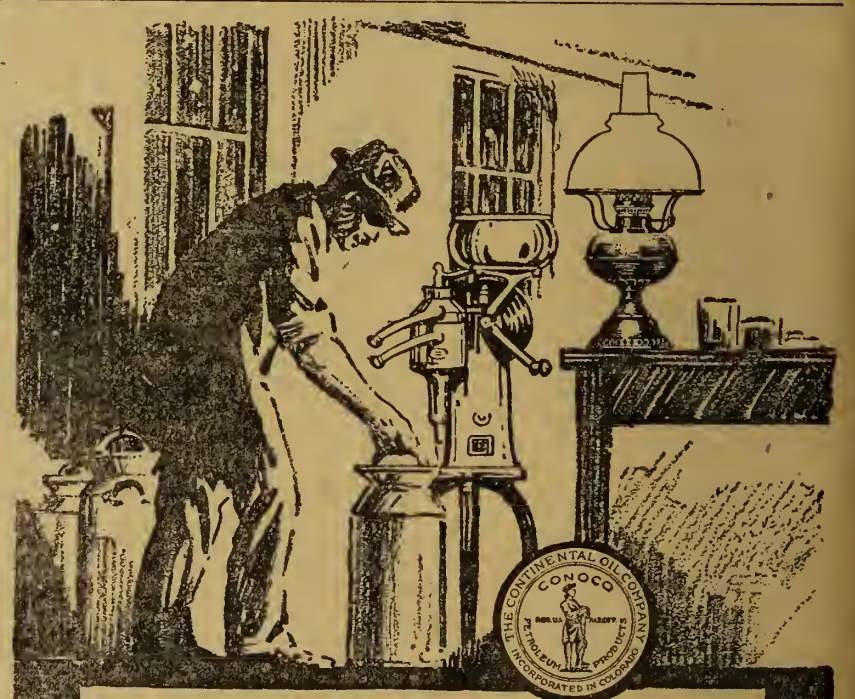

Takes Good Light and Good Eyes

The steadiness of Rayo light—neither flicker nor flare—makes it almost as easy to do delicate particular tasks by lamplight as by daylight.

The RAYO LAMP

is as easy to light as a gas jet. Merely raise the gallery and touch a match. A Rayo is easy to re-wick and easy to keep clean. Artistic and ornamental. If your dealer doesn't carry the Rayo Lamp write our nearest station. Use Conoco Safety Oil for best results.

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$18.00 Sweep Feed Grinder. | $23.00 Galvanized Steel Wind Mill.

We manufacture all sizes and styles. It will pay you to investigate. Write for catalog and price list.

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The Farm Home

MRS. H. T. FRENCH

Questions about home problems promptly answered by letter and thru the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

Pleasant Paths for the Young

"Now always there is more to learn.
(How History does grow),
And every day they find new things
They think we ought to know.
And if it must go on like this,
I'm glad I live today,
For boys ten thousand years from now
Will not have time to play."

This pathetic complaint may have been justifiable some years ago, but not today—a time when boys and girls are glad indeed that they live, work, love and play surrounded by an atmosphere of sympathy and appreciation. Child culture is now a study—a real live science, and present educational methods do not include the simple studying and reciting without comprehending the meaning; for knowledge is now imparted in such a way as to awaken genuine interest on the part of the child.

Mothers and fathers, let your associations with your children be so close that you may enjoy with them their acquaintance with objects and things in nature that are playing so important a part in the education of the young today. Help them to observe the habits of birds as well as all vegetable and plant growth, and you will surely be rewarded as they pursue the investigations from very love of them rather than as tasks that "must be performed."

A Teacher's Creed

I believe in boys and girls, the men and women of a great tomorrow; that whatsoever the boy soweth, the man shall reap. I believe in the curse of ignorance, in the efficacy of schools, in the dignity of teaching and the joy of serving another. I believe in wisdom as revealed in human lives as well as in the pages of a printed book; in lessons taught not so much by precept as by example; in ability to work with the hands as well as to think with the head; in everything that makes life large and lovely. I believe in beauty in the schoolroom, in the home, in the daily life and out of doors. I believe in laughter, in love, in all ideals and distant hopes that lure us on. I believe that every hour of every day we receive a just reward for all we are and all we do. I believe in the present and its opportunities, in the future and its promises, and in the divine joy of living. Amen.—Edwin Osgood Grover.

School Lunches

Troublesome tho the task may be, many mothers are meeting the duty as best they can, hoping that the time will come when the school lunch will be served warm and tempting from our school kitchens by trained boys and girls in our cooking classes.

The following lunches may be suggestive to the busy mother while we wait the happy day when the dinner pail or basket lunch will be a thing of the past:

1. Two lettuce sandwiches, two of brown bread and cream cheese, two marguerites, two olives, an orange.
2. Two chicken sandwiches, two of chopped figs, a handful of peanuts, a little sponge cake, a pear.
3. Two brown bread and egg sandwiches, two of white bread and dates, a slice of lamb salted, two ginger-snaps, a piece of molasses candy.
4. Two Boston brown bread and butter sandwiches, two of white bread and orange marmalade, a chicken drumstick, a square of fruit wafer, a peach.
5. Two sandwiches of white buttered bread and chopped watercress, two of whole wheat bread with stewed prunes and chopped nuts, two cholocate wafers, two olives.
6. Two sandwiches of white bread, lettuce and cream cheese, two of preserved ginger, a little round cake, an orange.
7. Two roast beef sandwiches, two of cream cheese and chopped peanuts, two small celery stalks salted, two sugar cookies, a jar of apple sauce.
8. Two minced ham sandwiches, two chopped celery with French dressing, a square of ginger-bread, a pear, half a dozen marshmallows.
9. Three sandwiches of plain bread and butter, a jar of mixed fruit salad, a slice of cold meat, three ginger cookies.
10. Two brown bread sandwiches or cornmeal gems, two of dates and nuts, a small spice cake, a jar of orange salad, a bunch of grapes.
11. Two celery sandwiches, two of chopped chicken and olives with a little mayonnaise, a jar of stewed pears, ginger-bread.
12. Two little baking powder biscuits, two sandwiches of white bread and jam, a stuffed egg, an apple or orange.
13. Two plain bread and butter sandwiches, two chopped figs, a baked apple (the pulp scraped out, put into a jar and moistened with the juice from the pan), two sugar cookies.
14. Two sandwiches of chopped meat, two of dates, two chocolate crackers, a jar of Waldorf salad.

Note.—A little story of how to equip a school kitchen so that twelve girls may practice cookery and serve hot lunches will be given in one issue of Western Farm Life for November. Any suggestions from our readers received before October 30th will be gladly welcomed.

PATTERN DEPARTMENT

All Patterns 15c each. Address WESTERN FARM LIFE, Pattern Department, 14th and Arapahoe, Denver, Colo.

2203—A Serviceable Model. Cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Requires 6¼ yards 44-inch material, with ⅝ yard 27-inch material for the cap, for size 36. This style makes a splendid work dress. It has simple lines, and is easy to develop. The pockets may be omitted. Linen, khaki, gingham, chambray, drill, seersucker and percale may be used for its development.

1955—Popular Ladies' Overall Apron. Cut in sizes 34, 38, 42 and 46 inches bust measure. Requires 6½ yards 36-inch material for 38-inch size. Percale, seersucker, gingham, chambray, lawn, alpaca or brilliantine could be used for this design. The back and sleeve portions are cut in one, and joined to the front in a deep armseye, and underarm seams. The fulness is held at the waistline under the belt.

1848—Smart New Style Girls' Coat. Cut in sizes 2, 4, 6, 8, 10, 12 and 14 years. Requires 2⅜ yards 44-inch material for 6-year size. This style is fine for cheviot, serge, velvet, corduroy, velour and taffeta. The sleeve is cut in raglan style, both comfortable and pretty, and has a cuff over a band. The fronts of the coat are trimmed with smart pockets.

2214—Trim Style for the School Girl. Cut in sizes 12, 14 and 16 years. Requires 5⅛ yards 36-inch material for 14-year size. This is fine for the new fall mixtures, for Jersey cloth, serge, satin, silk and velvet. It is also nice for wash fabrics. The sleeve is stylish in long or short length. Smart pockets trim the skirt.

That pigs running at will in lots or fields do better than those kept closely confined, is well known by experienced hog keepers, yet on too many farms the hogs are kept from one year's end to another in a small filthy pen and muddy yard.

WONDERFUL EGG PRODUCER

Any poultry raiser can easily double his profits by doubling the egg production of his hens. A scientific tonic has been discovered that revitalizes the flock and makes hens work all the time. The tonic is called "More Eggs." Give your hens a few cents' worth of "More Eggs" and you will be amazed and delighted with results. A dollar's worth of "More Eggs" will double this year's production of eggs, so if you wish to try this great profit-maker, write E. J. Reefer, Poultry Expert, 4247 Reefer Bldg., Kansas City, Mo., who will send you a season's supply of "More Eggs" Tonic for $1.00 (prepaid). So confident is Mr. Reefer of the results that a million-dollar bank guarantees if you are not absolutely satisfied your dollar will be returned on request and the "More Eggs" costs you nothing. Send a dollar today, or ask Mr. Reefer for his free poultry book that tells the experience of a man who has made a fortune out of poultry.—Advt.

The Business School and the Boy on the Ranch

As a means of supplying the boy on the ranch with a most useful and desirable education at the least outlay of time and money the business school provides an ideal training.

Here the boy gets a practical training in business affairs and that broadening in general intelligence which enables him to better manage the financial matters connected with ranching and farming and to become a more intelligent and influential citizen as well.

An increasing number are taking the courses each year for the value of the training given, with no thought of or desire to try for a commercial position. The fact that a three or four months' course can be taken, beginning and ending at any time, makes the training especially available to those who have but a limited time to attend school.

Interested young people are invited to write for our catalog.

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Send no Money.
Victrolas With Records, of your own choosing, $17.25, $30.85, $47.35, $60.85 and up—Terms as low as 50 cents a week. Write for photos and description of 8 Fine Victrola Outfits, Free Book of illustrated Vernon Castle Dances and set of war pictures. We pay carriage on Victrolas and Records—satisfaction guaranteed
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$1 Best Cane Granulated, when you buy $10.00 worth of other groceries. You'll save a lot of money by buying all your groceries at "Headquarters." We carry full and complete stocks of groceries, hardware, clothing, shoes, furniture, machinery, etc., in Omaha, All sold direct to you at wholesale prices. A postal brings our Grocery Catalog or Big Book—free. (a)

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Save 20 to 50 per cent on your purchases. Write for our big, free 450-page General Merchandise Catalog and Special Grocery Bargain Book.
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GENERAL MERCANTILE COMPANY
628 "The Great Mail Order House" South 9th Street Omaha, Neb.

Big Money in Running Water

Let us start you in a business that will make you from $15 to $50 a day when farm work is slack. Other men have done it for years with an Improved Powers Combined Well Boring and Drilling Machine

One Man One Team

Same rig bores through any soil at rate of 100 ft. in 10 hours, and drills through rock. One team hauls and operates machine. Engine power if wanted. Easy to operate—no experts needed.

Small investment; easy terms. Make machine pay for itself in a few weeks work.

There is a big demand for well at water stock and for irrigation

Write for free illustrated circulars showing different styles.

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Good Plumbing
A Real Aid to Good Living

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"Standard" Plumbing Fixtures

—as described in "'Standard' Plumbing Fixtures for the Home," which we will gladly send you on request—represent the kind of necessity that belongs in the comfort, convenience and luxury class.

If you have not already installed plumbing, you of course expect to in your new or remodeled home. And putting "Standard" fixtures for Bath, Kitchen and Laundry in your old house is a simple matter.

"Standard" represents experience, reputation and variety in the plumbing fixture line. Plumbers in your nearby towns can tell you about "Standard"—which you should demand in order to be certain of maximum service and satisfaction.

Write today for a free copy of "'Standard' Plumbing Fixtures for the Home." See that the "Standard" Green and Gold label is on the fixtures you buy.

Standard Sanitary Mfg. Co.
Dept. 236 Pittsburgh

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Please send me a free copy of "Standard" Plumbing Fixtures for the Home.
Name
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State
My usual trading place is
Name of Town

Profitable Farm Poultry

W. E. VAPLON

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries Poultry Department, Western Farm Life, Denver, Colorado.

The following information from the Department of Agriculture is not only interesting but instructive, especially for those who must buy feed for their poultry. At the present price of grain, the report is not very encouraging to these people, but the farmer need feel no necessity for cutting down the size of his flock, providing he culls out all the non-producers.

We understand that quite a number of commercial poultrymen are going out of business, at least for the time being, because of the high cost of feeds, and perhaps they are wise in doing so, as they have no guarantee of extremely high prices for their products, and certainly no guarantee that their hens will lay an unusually large number of eggs during the winter months.

This report will not be found different from many others available in showing plainly that the older hens lay very few eggs during October, November, December and January, and that only the well cared for pullets make a profit during those months.

The farmer is due to make good money on his poultry during the next few years, if for no other reason than that his flock costs him less than half to feed than does the flock of the poultryman who buys all his feed. Cull potatoes, broken, unmarketable beans, root crops of various kinds should go a long way toward feeding the farmer's flock this winter. With the grain found in the stubble fields, a feed of mash once a day made up of these waste products, the potatoes and beans thoroly cooked and perhaps mixed with bran, his flock should bring splendid returns both in growth and eggs.

It will pay every reader of Western Farm Life to go over this government report very carefully. From it can be figured quite closely the pounds of grain required to feed a fowl each month and the probable returns in eggs.

Cost of Egg Production

The cost of feed for producing eggs with pullets and yearling hens both from Leghorns and from general purpose breeds, in the experiments on the United States Department of Agriculture farm, Beltsville, Md., during the past year, even with the high price of grains, has been considerably lower than the price received for near-by fresh eggs.

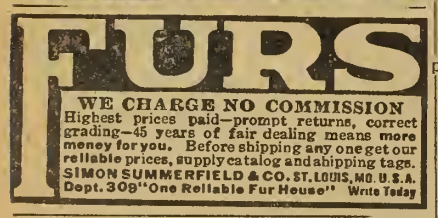
Leghorn pullets ate an average of 4.8 pounds of feed in producing a dozen eggs. The feed costs on an average 12.9 cents per dozen eggs produced by the flock. The cost of feed per dozen eggs varied from 9.2 cents in July to 41.4 cents in November, when during molting season the flock continued to eat, but, of course, produced fewest eggs. The number of pounds and the cost of the feed consumed per dozen eggs for each four-week period during the year were as follows, beginning December 1st: Pounds of feed—5.3, 6.6, 5.4, 4.7, 3.3, 3.0, 3.0, 3.2, 4.9, 4.8, 8.6, 10.9 and 18.4; cost of feed—12.0, 16.4, 13.7, 13.5, 10.3, 10.0, 10.0, 10.0, 9.2, 9.2, 16.8, 22.4 and 41.4 cents.

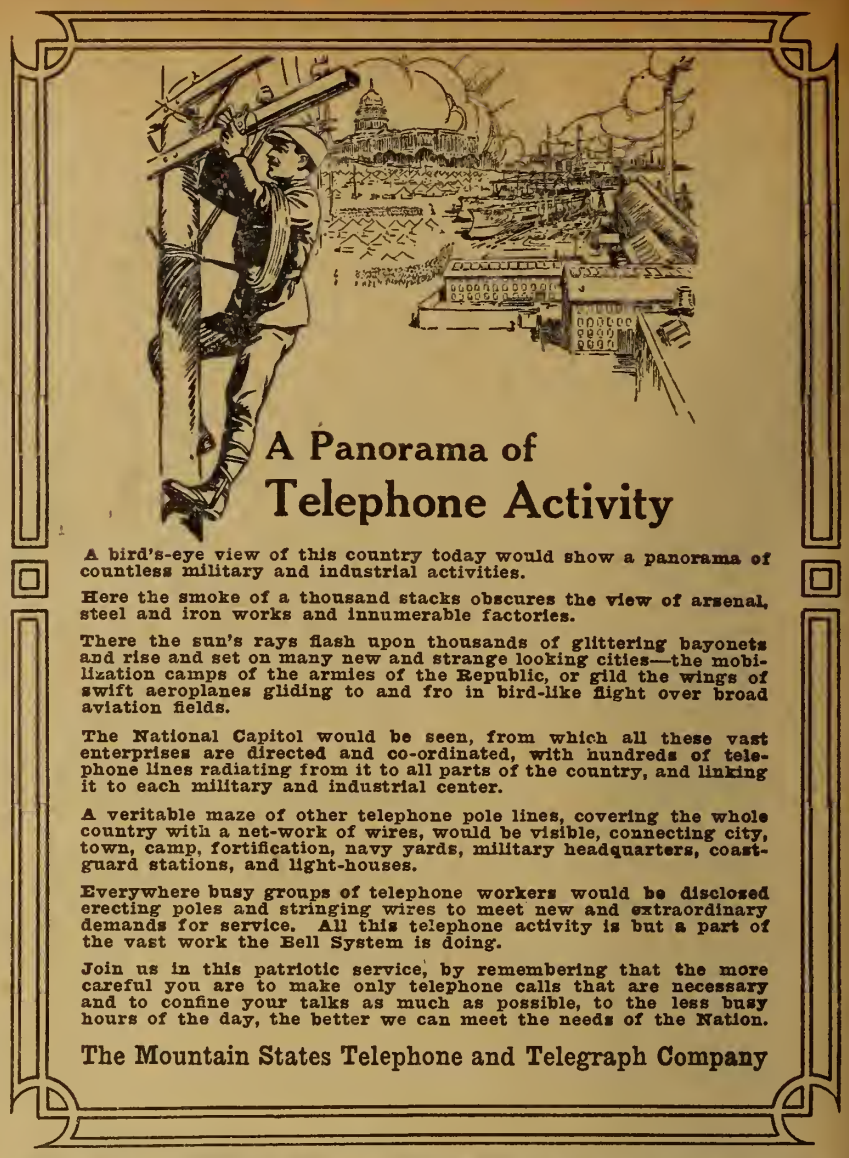
Leghorn yearling hens ate on an average 5.5 pounds of feed per dozen eggs produced. The average cost of feed per dozen eggs produced by the flock was 14 cents. The cost of feed per dozen eggs varied from 7.3 cents in July to 266.3 ($2.663) in November (moulting period). The number of pounds and the cost of the feed consumed per dozen eggs produced by the flock for each four-week period beginning December 1st were as follows: Pounds of feed—20.3, 10.0, 5.8, 5.1, 3.6, 3.3, 3.3, 3.4, 3.9, 5.3, 7.1, 30.8 and 118.7; cost of feed—45.9, 24.8, 14.7, 14.7, 11.1, 11.0, 11.0, 10.6, 7.3, 10.1, 13.9, 64.3 and 266.3 cents.

The general purpose breeds ate considerably more feed than the Leghorns, the pullets consuming an average of 6.7 pounds of feed and the yearling hens 9.6 pounds in the production of a dozen eggs. The feed cost averaged 16.75 cents per dozen eggs for the pullets, varying from 11.7 to 28.9 cents, and for the yearlings averaged 24.5 cents, ranging from 13.9 to 81.3 cents. The number of pounds and the cost of the feed consumed by the pullets in producing a dozen eggs for each four-week period beginning November 1st were as follows: Pounds of feed—10.9, 7.4, 10.9, 5.5, 5.8, 4.6, 4.4, 4.7, 4.7, 6.3, 6.9, 9.2 and 14.1; cost of feed—24.4, 16.8, 27.1, 14.0, 16.6, 14.3, 14.7, 15.6, 14.7, 11.7, 13.2, 17.9 and 28.9.

For the general purpose yearling hens the amounts per dozen eggs were as follows: Pounds of feed—34.6, 32.9, 32.7, 12.6, 8.5, 5.7, 5.3, 6.1, 6.4, 7.5, 7.6, 10.0 and 21.0; cost of feed—77.7, 74.5, 81.3, 32.0, 24.5, 17.7, 17.7, 20.3, 20.0, 13.9, 14.5, 19.5 and 43.1 cents.

The average cost of the mash and of the scratch mixture per 100 pounds for each month, beginning in July, 1916, was as follows: Mash—$1.82, $1.85, $1.88, $2.02, $2.19, $2.24, $2.33, $2.42, $2.70, $2.96, $2.98 and $2.84; scratch mixture—$1.90, $1.98, $2.03, $2.09, $2.30, $2.29, $2.64, $2.66, $3.05, $3.25, $3.68 and $3.41. The cost of the feed used in producing eggs can be figured from the amount of feed required to make a dozen eggs at different periods thruout the year, or feed prices may be compared with those used in this work.





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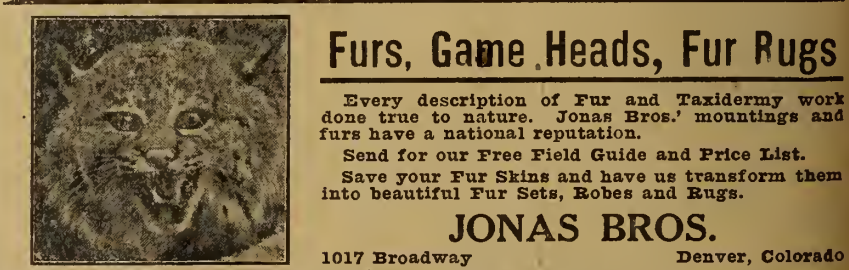

Farmers' and Stockmen's Exchange

FARMS AND RANCHES

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WANTED — TO HEAR FROM OWNER OF good farm for sale. Send description and cash price. Co-operative Sales Agency, Minneapolis, Minn.

FOR SALE—160 ACRES GOOD LAND, FOUR miles from Haswell. Also house and lot in Haswell. $8,500 takes both. Minnie S. Boone, Pagosa Springs, Colo.

IRRIGATED FARM FOR SALE—225 ACRES, five miles from Denver Stockyards, one mile from railroad station. First-class water right; excellent improvements; liberal terms. J. D. Hitch, 525 Cooper bldg., Denver.

DO YOU DESIRE A HOME? OR DO YOU want to sell or trade the one you already have? We are in a position to assist you either way. We will find you a customer who will buy your real estate, or we can find you a home for cash or easy payments anywhere you choose. Let us hear from you at once. Perry & Son, Weldona, Colo.

4,000 ACRES, ALL UNDER IRRIGATION. Cuts 2,000 tons of hay, good ranch improvements, price $25 per acre; 10,000 acres of leased land adjoining.

15,000 acres, about 2,000 under irrigation, good ranch buildings, $12.50 per acre.

4,000 acres, good foothill ranch, lots of running water, $10 per acre.

640 acres, good grain section, 2 sets of improvements, $12.50 per acre. Sydney C. Osmer & Co., 808 15th St., Denver.

IRRIGATED LAND NEAR DENVER FOR SALE on crop payments, in tracts of 80 acres and upward; 50,000 acres to select from. We are not agents but trustee closing out large trust estate under order of court. Within 10 to 30 miles of Denver and near railway towns having sugar factories, canneries, creameries, alfalfa mills, elevators, etc. Fertile soil, under splendid irrigation system. Terms, one-tenth cash, balance 10 annual payments, interest 6 per cent, but first four years purchaser need only pay us two-fifths of crop in lieu of regular payments due those years. Write for literature. Chicago Title & Trust Co., Trustee, 716 Ideal bldg., corner 17th and Champa sts., Denver, Colo.

I HAVE SOME CASH BUYERS FOR SALABLE farms. Will deal with owners only. Give full description, location and cash price. James P. White, New Franklin, Mo.

GOVERNMENT LANDS

GOVERNMENT LAND. FREE BOOKLET. JOseph Clark, Sacramento, Cal.

LIVE STOCK

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CATTLE

EXCELSIOR FARM HOLSTEINS—BULLS $60 and up. Cows and heifers for sale. Western Kansas. C. C. Cole, Levant, Kans.

ALL OF OUR GRADE COWS AND HEIFERS must go and part of the purebreds. A lot of them will be fresh in 60 days. Also a very nice stallion 8 years old, record 2:10, a grand individual. M. E. Penrose, 1855 Blake st., Denver. Phone Main 5713.

SHIP YOUR LIVE STOCK TO US—COMPEtent men in all departments. Twenty years on the market. Write us about your stock. Registered breeding stock bought on orders. Market information free. Ryan-Robinson Com. Co., 225 Live Stock Exchange, Kansas City, Mo.

HOGS

REGISTERED, BIG TYPE DUROC JERSEY hogs for sale. Edgemoor Farm, Littleton, Colo. Caldwell Martin, Owner.

POULTRY

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

QUALITY DARK CORNISH, THE IDEAL FARM fowl W. W. Officer, Fowler, Colo.

S. C. BUFF ORPINGTONS. STOCK FOR SALE. F. M. Shank, R. No. 2 A, La Junta, Colo., State Vice-Pres. Nat. S. C. Buff Orp. Club.

A FINE LOT OF VIGOROUS, EGG-BRED S. C. W. Leghorn cockerels for sale. They will improve your flock. Rowley Egg Farms Co., Palisade, Colo.

FOR SALE — ALL KINDS OF PUREBRED poultry, cocks and cockerels, geese, eight kinds of ducks, pearl and white guineas, bantams, hares, rabbits, guinea-pigs, dogs, fancy pigeons, canaries. Write wants; free circular. D. L. Bruen, Platte Center, Neb.

QUALITY DARK CORNISH, AT NEBRASKA State Fair last month, won: 1st and 2nd cockerel, 1st and 2nd pullet, 1st and 2nd young pen and 1st old pen. Have a few choice cockerels to spare at $3.00 and $5.00 each. R. H. Jandebeur, Alma, Nebraska.

FOR SALE—RHODE ISLAND RED AND White Leghorn cockerels and pullets from the finest bred-to-lay matings in all the world. Not exhibition quality or color specials but birds bred from 235 to 250-egg birds. These birds will raise the egg-producing qualities of any flock 50%. A trio will raise a flock of living egg machines. Select birds weighing 1½ to 2½ pounds, $2 each. No star boarders, but producers. Money refunded if birds are returned. The Golden Egg Farm, Salina, Kansas.

MISCELLANEOUS

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

WHITE SWEET CLOVER SEED, REASONABLE. John Lewis (farmer), Madison, Kans.

RAW FURS WANTED—DON'T SHIP YOUR wool, poultry, hides or furs of any kind until you get our price list. Perry Brothers, Weldona, Colo.

HELP WANTED

MAN TO WEAR FINE SUIT—ACT AS AGENT. Big pay, easy work. Banner Tailoring Co., Dept. 699, Chicago.

SALESMEN WANTED—OWING TO DRAFT and enlistment, we have a few well-worked territories open, and will be pleased to hear from interested persons. Applicant must be exempt from draft. McConnon & Co., Dept. R, Winona, Minn.

RAILWAY MAIL CLERKS WANTED—MEN, 18 or over. Commence $75 month. Every second week off with pay. Education unnecessary. Sample examination questions free. Write immediately. Franklin Institute, Dept. H. 177, Rochester, N. Y.

THE WAY TO GET A GOVERNMENT JOB IS thru the Washington Civic Service School. We prepare you and you get a position or we guarantee to refund your money. Write to Earl Hopkins, President, Washington, D. C., for book FK 847, telling about 292,296 government positions with lifetime employment, short hours, sure pay, regular vacations.

KODAKS

KODAKS, CAMERAS, PHOTO SUPPLIES—Fords, the best kodak store, 1029 16th St., opp. old P. O., Denver, Colo., for Eastman Kodaks, all makes cameras, films, photo supplies; develop any size roll films, 10c; print pictures, 3c each and up; mail orders solicited; kodak and camera catalog mailed free upon request. Mention this paper.

PATENTS

WE BUY AND SELL PATENTS. INTERNAtional Pat. Co., 583 Brandeis, Omaha, Nebr.

PET STOCK

BLUE MERLE AND ENGLISH SHEPHERD pups. Hermann Bruesehoff, Norwood, Minn.

NURSERY STOCK

BUY TREES FOR YOUR ORCHARD OR GROVE and have two and three years to pay at the same time. All stock that fails to grow replaced free. Address Weldon Valley Adv. Co., Weldona, Colo.

TANNING

LET US TAN YOUR HIDE—COW, HORSE OR calf skins for coat or robe. Catalog on request. The Crosby-Frisian Fur Co., Rochester, N. Y.

BEE SUPPLIES AND HONEY

BEE SUPPLIES OF BEST QUALITY. SEND for 68-page illustrated catalog. We also sell Comb and Extracted Honey. The Colorado Honey Producers' Association, Denver.

EXTRACTED HONEY, WHITE, ONE 5-GALLON can $9.50, two $18.00. Harry Sanders, 3516 Clayton, Denver, Colo.

EXTRACTED COLORADO ALFALFA HONEY. Put up in five-gallon 60-pound cans, 12½c per pound. Guaranteed. John J. Van Engen, R. F. D., Crawford, Colo.

BEAN GROWERS AND THRESHER MEN

THE

BIDWELL BEANER

is what you are looking for
It does the work

Write at once for catalog and prices on this and other

BEAN HARVESTING MACHINERY

E. E. SCOTT

1817 15th St. Denver, Colo.

Tractors, Plows, Hay Presses, Feed Grinders

Cream Separators,

Casings & Inner Tubes.

Distributors for the Genuine Pennsylvania Oils and Greases

Write Us

THE MOTOR IMPLEMENT CO.

1610 Fifteenth St. Denver, Colo.

BLUE RIBBON HERD

DUROC JERSEY HOGS

Everything Registered

Stock for Sale

C. F. BURKE, Rocky Ford, Colo.

OVER 3,000 PERCHERON SALES

These transfers of sale were made on the Percheron Stud Book alone in the four months ending March 1st, 1917

Does This Mean Anything to You?

It should prove beyond a doubt that farmers everywhere are fast seeing the possible profit in raising better stock and are anxious to secure the seed for a foundation in Pure Bred Sires and Dams.

Big Drafters Command the Highest Prices Ever Known to the Trade

Horses are and always will be as necessary as plows. Get in the game NOW and reap your harvest from good seed.

Write us today your desires. We will be glad to correspond with you.

Our horses won 42 First and 14 Grand Champion prizes in Colorado and Wyoming in 1917 show season just closed.

The Jarosa Ranch

HOWARD M. JAY, Owner

R. F. D. No. 2, Box 71

Longmont, Colo.

Percheron and Belgian Horses
Holstein Cattle

TAYLOR'S POLAND CHINA BOARS FOR SALE

25 of the big type Poland Spring Boars for sale out of my big herd boars Big Equal and Big Peter. Peter weighs 700 lbs. at 18 months and won first at Minnesota and Dakota State Fair last fall, also fourth at Omaha Swine Show where 30 pigs were shown in his class. Am pricing these boars for quick sale from $40 for May farrowed to $75 for March farrowed pigs, crated, F. O. B. Farnam. Can load at Farnam at 10:45 in morning and will arrive at Sterling, Colorado, the same evening, or can ship by way of Holdredge over main line B. & M.

Write me for breeding stock.

Reference: Prey Bros. Commission Co., Denver, Colo.

H. B. TAYLOR, Farnam, Nebr.

Kansas Germ Free Fluid Vaccine

(Made in Wichita, Kansas)

Absolutely Immunizes Calves Against Blackleg

You cannot afford to experiment with unproved Vaccines. This Vaccine has immunized 250,000 calves, not one of which afterward died of Blackleg. Vaccinate now with this proved preventative and insure your herd absolutely against losses. One dose does the work.

We State Facts. We Make No Unproved Claims

The Kansas Blackleg Serum Company, Inc.

Chas. E. Collins, President

Used by leading Cattlemen. Write for Names and Free Blackleg Book.

Offices, Stockyards, Denver, Colo., Wichita, Kans., Amarillo, Texas.

This Trade Mark is Your Protection

HIGH CLASS JERSEYS AND DUROCS

I have a corking good yearling bull, out of a cow that has just qualified for Register of Merit; also a dandy November calf out of a R. M. cow. These are priced right. Can you use one of them?

Also some Duroc boars, March pigs, by a son of Grand Model, and out of a daughter of Model Critic. They are good, and priced at $50 each. Worth more money.

Above calves sired by the great Count Majesty

A. M. McCLENAHAN Greeley, Colorado

Percherons, Belgians, Shires One of the largest breeding herds in the world. I can spare 75 young registered mares in foal to herd sires weighing 2,800 and 2,400 pounds. Two, three, four and five-year-old stallions, ton and heavier; also yearlings. As a producer of the best specimens with size, substance and soundness, this herd has no superior.

FRED CHANDLER, ROUTE NO. 7, CHARITON, IOWA, JUST EAST OF OMAHA

CLEAN UP YOUR HARNESS

Don't let the leather get stiff and crack. You'll find that your harness will last much longer if you use

EUREKA Harness Oil

Preserves the leather and prevents checking. No acid, lamp black, or fat.

Sold in sealed tins containing from 1 pint to five gallons, and in barrels and half-barrels by reliable dealers everywhere.

THE CONTINENTAL OIL COMPANY
(A Colorado Corporation)

Denver Pueblo Salt Lake City Cheyenne
Butte Albuquerque Boise

BARGAINS Percherons, Belgians, Shire, Suffolk, Clyde, Hackney, Great Coach Stallions, $450 and up. Good Jacks. One, two and three years' time given purchasers.

R. I. LITTLE

Good Block Des Moines, Iowa

JACK MEN, LISTEN

I have the largest 6-year-old jack west of the Missouri River for sale. Other bargains in Mammoth Jacks and Jennets.

Inspection Invited Satisfaction Guarantee

W. H. WHEELER, Garden City, Kan

$3.00 Brings This SUIT

Tailored To Your Measure

on an offer so easy, so liberal, so wonderful, you can hardly believe it. The very latest 1918 style, a perfect fit, magnificent new design, *delivered prepaid.* ***Send no money now, not one cent,*** just write us a letter or postal and say, ***"Send me your new amazing $3 suit offer"*** and get the latest big set of cloth samples to pick from, a great book of all the brand new 1918 fashions shown in gorgeous colors ***all FREE,*** an offer so splendid, so marvelous, it's hard to believe; greater and better than any tailoring offer you ever saw. ***How to get all your own clothes free,*** how to make all your spending money in your extra spare time, how to become more important, influential and prosperous. Don't wait, don't put it off, write us your name and address now, today, this very minute. Address

BANNER TAILORING CO., DEPT. 697 CHICAGO

Comment by Farmer Putnam

(Continued from page 9)

buried in the trough and was fillin' up fur dear life. I sez to him that he was in a awful rush to make a hog of hisself on that hash, but he sez: Sue, just smell of that stuff; ain't it grand! And you oughter taste it; it's heavenly. Don't ever tell the master I said anythin' ag'in eatin' canned goods.

Well after that recommend it didn't take me long to git busy, so I put my nose down in the trough and got my fill. Poor Jimmie had to be dragged away, or he'd a foundered. The stuff had a kind of a peculiar sweetish sour taste and made the whole barn smell nice all the time it was bein' fed.

A few days later some of the other ranchers come to our place and a professor from Fort Collins come down and I listened while he explained all about silage to them farmers. He said silage was just like peaches and cream fur us cows. You see before they got the silage us cattle had to eat dry cornstalks and sorghum fodder all winter with sometimes a little oil cake fur dessert. The professor said he knowed of ranchers that saved $500 or $1,000 a year that they used to pay out fur oil cake and grain before they knew about silage. Now they don't need half so much grain and hardly any oil cake.

You humans don't know what us cattle has been up against in winter. Did you ever try chewin' dry cornstalks took in from the field after the wind storms blowed 'em full of sand? That's what they call roughage and it's sure named right. It sets our teeth on edge and makes us fussy and discontented so we cain't git fat or make milk. You see if cattle is to thrive they has to have fattenin' feeds, either to make beef or milk. I'm beef — I wouldn't want to be no scrawny high hipped old milkin' machine, but they milk me just the same and sell it to the creamery. I sometimes laugh when I think of the poor city folks that pays 50 cents a pound fur butter made from my so-called butterfat, but as long as the boss wants to pretend that I'm a milk cow why I don't care; he gives me plenty of feed and he don't seem to give a darn — excuse my language — whether I pay him back in milk or not. We all eat together and they ain't no way he's got of checkin' up on how much we git.

She went on to tell all that the professor said about silos and all that stuff was interestin' to me, but the cow hadn't told me yet why she was cryin' so I sez: Why don't you tell me what made you so sad when I come in here?

Oh, she sez, breakin' out into fresh tears: The silage is all gone fur this winter and I got to go back to dry fodder and grass. I just hate dry feed!

After thankin' her for the information and biddin' her goodbye I walked down into the pasture and all of a suddent I heard somethin' come up behind me that sounded like a cyclone. Lookin' back I seen a cloud of dust and a big bull in the middle of it. I thot first I'd stop and interview him on the value of silage fur breedin' cattle, but changed my mind because he seemed to be in a hurry to git by, so I dodged behind the only cottonwood tree in the pasture. He turned round to look fur me and I shinned up the tree as fur as I could go. Lookin' over in the corral I seen Sue, the sorrel cow, leanin' ag'in the fence laughin' till her sides ached.

Talk silo to him why don't you, she sez, yellin' to me.

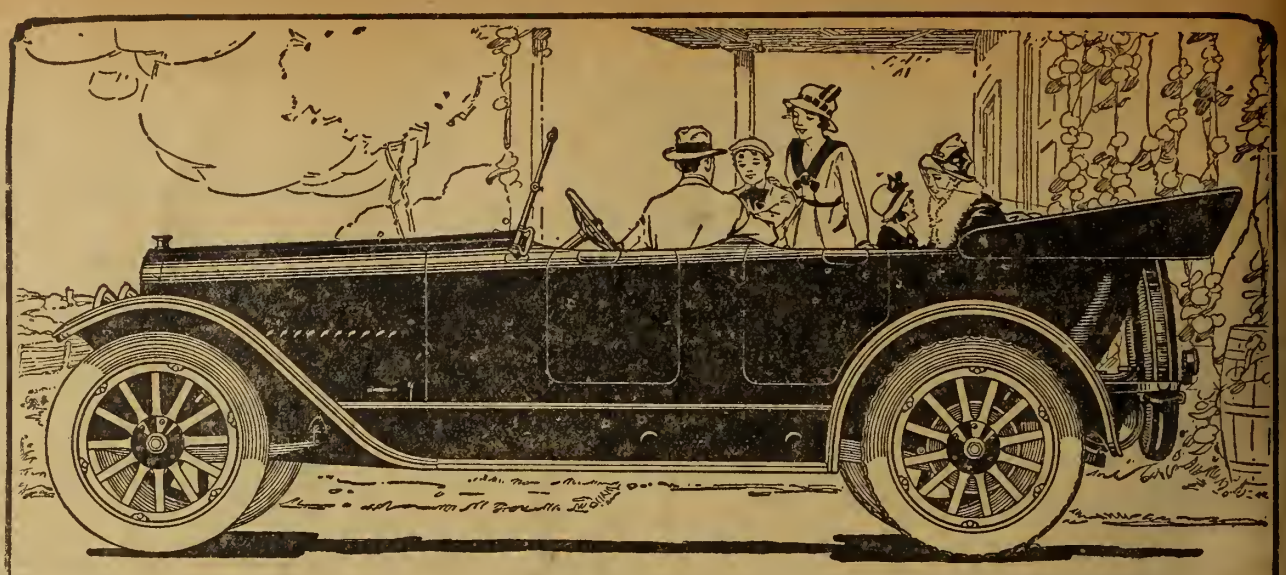
Silo be dinged sez I, if you've got any influence with this here male critter call him off.

She stood there laughin' at me a spell and then she seemed to git sorry fur me because the limb was saggin' under my weight, so she walked down the pasture and whispered in the bull's ear and he dropped his tail and run to the feedlot. So I clumb down and biddin' the cow goodbye I sez:

What in the world did you say to that bull to make him trot off so quick?

I told him they was servin' silage ag'in, but I reckon you-all better hurry away, because when he finds out I lied to him he'll be after you hot foot.

THOMAS JEFFERSON PUTNAM.



When the Test Comes

Men Wish They Had a Mitchell

Any car seems strong enough under easy-road conditions. But there come times which mean a breakdown without Mitchell over-strength.

Many cars will yield good service for a year or two. But a car to last a lifetime must have wonderful endurance.

That is why we doubled our margins of safety. Three years ago we adopted the standard of 100 per cent over-strength.

It meant much added cost. All safety parts are now vastly oversize. Important parts are built of Chrome-Vanadium. And 440 parts are built of toughened steel.

Two Mitchells that we know of have run over 200,000 miles each. That is 40 years of ordinary service. And repair cost has been reduced about 75 per cent.

Worth Double Price

The evidence is that this over-strength makes a car worth double price. That is, it saves its price in longer life, in upkeep and repairs.

So, if this over-strength meant added cost, it would be wise to pay it. But it doesn't. Both sizes of the Mitchell Six sell far below other cars of like size and class.

Beside this, the Mitchell offers many extra values. It has 31 features—like a power tire pump—which nearly all cars omit.. It has shock-absorbing rear springs which have never yet been broken.

It has long-enduring finish, fixed by heat. It has extra-grade leather which lasts. It combines in one model all the new attractions we found in 257 show cars.

The Secret Is This.

The secret of these extra values lies in wonderful factory efficiency. This model plant was built and equipped by John W. Bate, the efficiency expert. Every building, every machine was designed to produce this car at the lowest labor cost.

The entire car—chassis and body—is now built under Bate methods here. The saving amounts to millions of dollars annually. Under no other conditions could cars like these be built at Mitchell prices.

The demand for Mitchells has grown four-fold since these standards were adopted. Go see what they mean to a car owner. Some dealer near you has our latest models now. If you do not know him, ask us for his name.

MITCHELL MOTORS COMPANY, Inc.
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WESTERN Farm Life

l. XIX Denver, Colorado, November 1, 1917 Semi-Monthly

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Seven Foot Corn at Seven Thousand Feet
(SEE ARTICLE PAGE 5)

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The Food Situation In France

Fred B. Pitney.

As I have kept house in Paris during the war, I can speak from experience on the food situation in France as it affects the individual. And let me remark in passing that one learns a great deal, when keeping house, of which one gets no inkling, when living in a hotel and eating in restaurants. One can always go to a restaurant and order a meal and get it. I have heard many visiting Americans, who lived in France in that way, pooh-pooh the idea that there was a food shortage in the country. If those same persons had had to search the markets before they had their meals, they would have gained a very different idea of the food situation.

Sugar offers an excellent concrete example. In a restaurant one is fairly certain of sugar for one's coffee. Three lumps to a person is the rule. Formerly, the sugar was put on the table in a bowl and one helped one's self. Now, the ration is served to each person separately. Still, one is fairly sure of one's sugar in a restaurant.

But if one is keeping house, one finds that one must have a "sugar card," permitting him to buy a stipulated amount of sugar in a month. The allowance is 1½ pounds of sugar a month, if three meals a day are taken at home, 1 pound if two meals are taken at home, and ½ pound if only one meal is taken at home. This means for the person who takes three meals at day at home 18 pounds of sugar a year. The annual sugar consumption per person in America is 85 pounds.

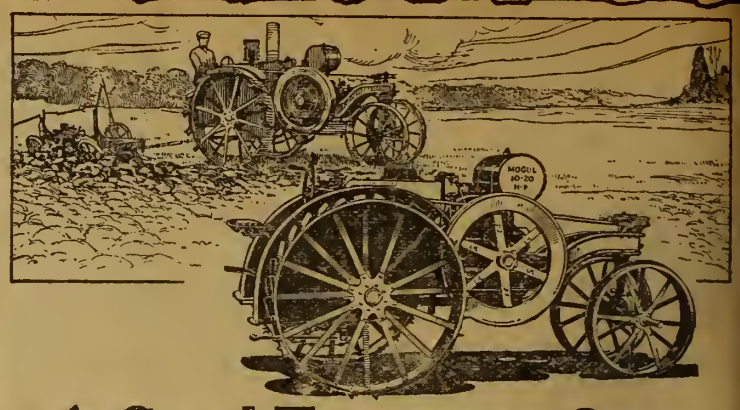
We paid last winter in Paris 11 cents a piece for eggs and $2 a pound for butter and there was frequently neither butter nor eggs nor milk to be had. Private families were allowed to buy one-eighth of a pound of flour at a time. The grocers could not sell flour, only the bakers. The flour mills could not choose their own customers, nor could the bakers and restaurants choose the mills they would buy from. Lists were made out, telling each miller to whom he could sell. This was in order that one section should not be able to eat up the stock of flour belonging to another section, or one baker deprive the customers of another, when all were short.

Let me give you the official figures on the wheat situation in France. It is estimated that there will be a deficit of approximately 5,000,000 tons of wheat in France over the period from September 1, 1917, to September 1, 1918.

The normal annual consumption of wheat in France is from 9,200,000 tons to 9,400,000 tons. France has always been an importer of wheat, her average production for sever l years before the war being 9,000,000 tons, or slightly less than the consumption. Since the beginning of the war her production has fallen off radically. In 1914 it was 7,700,000 tons, in 1915 6,065,000 tons, and in 1916 5,840,000 tons, while for this year the crop is estimated at 4,000,000 tons with a possibility of rising to 4,500,000 tons, leaving for the period from September, 1917, to September, 1918, a deficit of nearly 5,000,000 tons, which must be made up by imports.

I have spoken of the scarcity of flour, resulting from the shortage in wheat. Let us try to see what this means to France. In the first place, it must be realized that there bread is the staple article of food. It is the base of all meals, especially among the working population. Breakfast consists of coffee or chocolate and bread. Luncheon is bread, soup, coffee and often, tho not always, some meat or fish and a vegetable. The big dish is bread. Bread is again the base of dinner or supper, however the meal may be called. Bread and cheese will make an entire meal for a French peasant, with a glass of wine to wash it down.

The French soldier's allowance of bread is a trifle over a pound and a half a day. On account of the shortage of wheat it has been necessary to cut this ration to a pound and a third a day. And it is not necessary to say that only dire necessity will countenance the cutting of the soldier's ration. —(Furnished by the United States Food Administration.)



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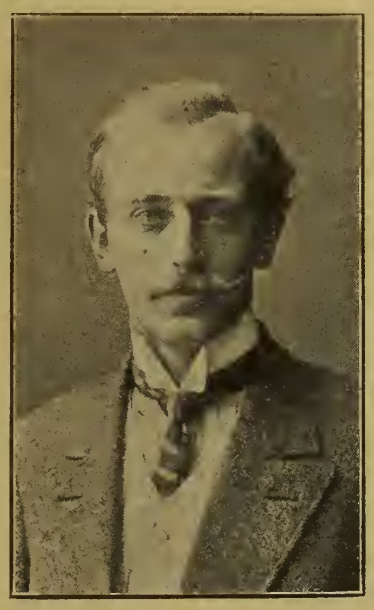
Volume XIX DENVER, COLORADO, NOVEMBER 1, 1917 Number 21

Co-operation Among the Dairy Farmers of Holland

EXPERT FROM ABROAD NOW IN COLORADO EXPLAINS DUTCH METHODS

DR. L. S. DIJKSTRA



The writer of the accompanying article, Dr. L. S. Dijkstra, at present connected with the Bowman Sanitary Dairy at Trinidad, Colo., was raised on a Friesian farm in Holland. The business of this farm was the production of herd book cattle for exportation. He was educated for the medical profession, but after practicing a few years took up agricultural studies at the University of Wageningen, where he obtained his diploma as dairy and cattle consul.

Thereupon he spent six years in the service of the Dutch government, during which time he made a careful study of the Holstein Friesian breed and the dairy industry of northern Europe.

He came to America about four years ago and was the producer of the first certified milk sold in the city of Memphis, Tenn. This milk was from a herd built up by importation of Holstein cows from Holland. On account of the unfavorable climate of the Mississippi Valley, Dr. Dijkstra left there last winter, coming to Colorado. While engaged in practical dairying at Trinidad he spends his spare time writing for technical journals on dairy subjects.

MANY a time I read in our dairy and farm papers the question, "How can I get possession of a herd of purebred cattle most profitably?" Looking around in this country, I must acknowledge that, compared with Denmark and Holland, the number of purebreds is very small in the United States.

What is the reason for this? Mainly, I might say lack of co-operation, or in other words, "no pulling together" as we find it in those little countries. Why is the co-operative movement among farmers not so well developed here as elsewhere, we might further ask. I consider the main causes of this the following:

First—America, taken as a whole, is a rich, prosperous country where there is infinitely more chance for success for the individual than in any country in the world.

Second—The result is that many a person wants to build up a business absolutely for himself, without having to do anything with the help of his neighbors. The American thus wants to be an absolutely free man.

Third—The American national population is composed of so many different people, with such varying home methods and feelings that to bring them together is often impossible.

Fourth—The American farms are often miles from each other, which makes co-operation impracticable.

Fifth—Many farmers are such by reason of circumstances and not by origin or birth, and therefore lack the fundamental knowledge and training that comes from being born and raised on a farm.

Aside from these reasons, there are many instances in America where there is absolutely no excuse for lack of getting together and in which the little farmer might as well draw the profits of co-operation as the big one. I especially have my eye here on those regions where we find lots of little farmers working each for himself instead of getting together and obtaining success at a minimum of effort and expense. Asking the little farmer in those districts, for instance, why do you not improve your herd? The answer is, because I cannot afford the purchase of well-bred stock. And he is right. Here co-operation shows a way out of the difficulty. In Denmark and Holland co-operative cattle breeding associations were formed 30 to 50 years ago and what they have done in that time is marvelous.

How They Are Organized

How is such a co-operative cattle breeding association organized? The local organizations generally have a membership of from 4 to 25, the average being about 16. The purpose of the organization is to rapidly improve and develop the best milkers by purchasing one or more bulls of a recognized good milking strain. In many cases the members of the association have more cows than can be served by the bull or bulls and it is necessary that a local judging committee, in conjunction with one of the herd book inspectors or experts, visit each member and select a number of cows worthy to be bred to the association bull or bulls, due consideration being given to the proportional size of his herd and the total number of cows in the association. The bull or bulls are stationed with the member who submits the lowest bid for keeping him, the price varying from $75 to $125 a year, or every member is obliged to keep the bull for a couple of months for nothing. A committee of the members inspects from time to time the herds and gives the necessary advice as to feeding, etc. Exhibition at the local, county and state shows, which is compulsory, also serves a useful purpose. The nearer the members live to each other, the better they keep in touch with each other, which has many advantages—for example, preventing violations of the by-laws. The by-laws of such an association are generally as follows:

1. The aim of the association shall be to develop a sound, well built, good paying breed of milch cows, by the purchasing of bulls of a good milking strain; by selecting the best dams (the selection being based on reliable information as to the milk yield, butter fat, appearance, build and pedigree), by a rational treatment of the offspring and by the holding of local shows.

2. The association shall be formed and carried on for a period of five years (some have a period of 29 years), and no member may resign or withdraw before the expiration of that period, except in case of change of residence, death or fraud, any of which cancels active membership.

3. The members of the association shall elect a managing committee of three members, one of whom shall go out of office every three years; during the first two years of the association's existence by drawing lots, thereafter by turn. Re-election is permitted. The managing committee shall elect a chairman, who shall also act as business manager, secretary and cashier of the association.

4. The managing committee shall select, purchase, offer for service, exclude sell and buy, select the cows, act as judges at the local shows and advise members regarding the keeping of their private herd book.

5. The chairman shall call the meetings of the committe, decide when and where they shall be held, preside at the same and keep the minutes. He shall represent the association, keep its accounts, discharge its correspondence, and act as its treasurer. Meetings of the committee shall be held whenever the chairman or the other two members desire.

6. The annual meeting of all the members of the association shall be held during the month of June. The fiscal year of the association shall run from the 1st of April to the 31st of March. On the latter date the chairman shall hand over his accounts to the revisor elected at the annual meeting the preceding year. The accounts shall be audited and returned to the chairman within eight days. Any member who wishes to bring up any matter for discussion at the annual general meeting must submit the matter in writing to the chairman not later than the 1st of June. At the annual meeting all questions shall be decided by a vote of the majority. The audited accounts shall be produced and the chairman shall submit a short report of the work of the association during the past year.

7. The association bull shall be sound, well built, of a recognized good milking strain and of good pedigree. He shall be insured and shall be examined by a veterinarian as soon and often as such is thought necessary.

8. The bull shall be tuberculin tested twice a year and shall not be utilized for breeding until the age of 20 months has been reached.

9. The bull may not serve the cow more than once, at most twice, and only two cows may be served by him a day. The fee for service shall be determined every year by the managing committee. The bull shall be exhibited every year at the local show and when three years old at the state show.

Records Must Be Kept

10. Every member shall keep the record in a proper herd book, as directed by the committee, and is bound to exhibit at the local shows all selected cows and their offspring by the association bull, until the heifers become pregnant for the first time and the bulls reach the age of two years. Calves less than three months old need not be exhibited. Each calf shall be earmarked with the number of its dam. This mark can be made either by tattoo mark or by a fixed clipping system as follows: The selected cows shall be divided into two classes, A and B, the former comprising animals especially suited for breeding and the latter comprising animals that may be used for breeding purposes. Every animal shall have its number branded on the back of the left horn. Cows of Class A have an A branded on the back of the left horn. Hornless cattle have to be marked by branding a mark on the left shoulder or tattoo marks.

11. To ascertain the real breeding value of the bull, as shown by the offspring, the bull is not allowed to be sold or changed until after at least three years' service, unless abnormal circumstances, as sickness, inability, etc., occur, in which case the committee has to decide.

12. The bull is not allowed to serve the following:

a. Cows that are not selected or standing outside the association.

b. Cows that have aborted, contagious abortus, vesicular vaginitis, metritis, leucorrhoe, or the least abnormality of the genital organs.

c. Cows that have been presented for the third time for breeding, every time with intervals of 21 days or shorter.

Violation of any of these regulations will be punished with fines from $5 to $100, publication of the violator's name in the local paper and, moreover, exclusion from association membership.

13. Each member is entitled to one vote, which he may register in person or thru a legal proxy.

14. Extraordinary general meetings may be called by the committee and must be called when one-third of the members so desire. The annual general meeting is only empowered to make fundamental changes within the association when at least half of the members are present. If less than half of the members are present, a new meeting must be called fourteen days later, and such meeting is empowered to make fundamental changes without regard to the number of members present.

15. The members of the association are jointly responsible for all debts contracted in conformity with the decision of the majority at the annual meeting or in settling the financial affairs of the association, when such settlement has to be made owing to the death or sale of bulls, or for any other reason, each member's liability being proportioned to the greatest number of cows registered as his property at any time during the fiscal year, regardless of whether some of them were sold, killed or stricken out. In order to be relieved of his liability a withdrawing member must pay his just proportion of the debt of the association, as furnished by the committee and approved by the members at the annual meeting. The withdrawing member shall not be entitled to any portion of a possible surplus.

16. The dissolution of the association may take place at the end of five or 29 years, but only as a result of a resolution to this effect passed by the majority of the members at the annual meeting.

These are the regulations under which dairy, cow testing and cattle breeding associations work in Holland and Denmark. These can also be applied in many cases here. It might be

Turn to Page 16

Why Does Wheat Winter Kill? Experts Reply

CONSENSUS OF OPINION IS THAT CAUSE IS LACK OF MOISTURE

WHY does winter wheat winter kill? This question has been asked and answered many times. It is again being asked because of last winter's experience in Colorado and Wyoming. A better way to put it is: How can winter-killing of winter wheat be prevented? Wheat growers are urged to read carefully the statements that follow and note the emphasis laid by each of the experts on the fact that winter-killing, in this region, is usually due to lack of moisture, and that to prevent drying out and dying of winter wheat it is absolutely necessary to start the crop on stored moisture, instead of depending on the chance of a wet fall. In addition to the statements given below we wish to mention also that the South Dakota experiment station, in answering the question from a farmer, says: "During the past six years we have grown winter wheat successfully both on corn stubble and fall plowing at Brookings for five seasons, but during the past winter the wheat was nearly all killed out on the corn stubble and entirely killed out on the fall plowing."

What Is Winter-Killing?

Alvin Kezer, Agronomist Colorado Experiment Station

The editor of Western Farm Life has asked what is winter-killing in wheat. This is a question which cannot be answered by a single sentence or a single statement.

In Colorado probably more wheat is killed during the winter and early spring by dry, cold weather, accompanied by high winds, than is killed by actual low temperatures. Our observation in Colorado, coupled with some experimental work, shows that this one factor is a greater cause of so-called winter-killing than all others combined.

On heavy lands thawing and freezing, which causes the soil to heave, will kill out the wheat, especially in spots. A rainstorm in the middle of the winter, turning cold at the conclusion of the storm, followed by a heavy ice sheet, or sleet which lies on the ground some time, will smother the wheat out, killing it most effectually. Heavy snowfall which melts and later freezes so as to leave an ice sheet closely adhering to the surface of the soil, will also produce the same effect. Both of these conditions have occurred, but they are conditions which are rare in this climate.

In some experiments which have been conducted, a portion of a winter wheat field has been rolled with a bar roller or a corrugated roller early in the spring. On such land winter-killing was less than on the untreated land in the same field in those years when any difference could be observed.

In winters where the thawing and freezing effect was abundant, so as to produce excessive loosening of the soil, this spring treatment has been very effective in reducing so-called winter-killing. In this case the soils are loose and fluffy and roots of the young wheat plants are frequently exposed or partially exposed. Dry, driving winds complete the job of exposure and drying out of the plants, thus killing them. Rolling with the proper kind of rough roller compresses the surface of the soil and prevents this action of the wind, without increasing the likelihood of the soil blowing.

The winter of 1916-17 was very severe on the winter wheat crop in much of the eastern plains section of Colorado. The damage was almost entirely due to dry, cold winds rather than to cold temperatures in this particular instance. Wheat will resist these cold, dry winds better than almost any other winter crop we have with the possible exception of rye. Winter barley and winter oats which will grow in Ohio, where the winter temperatures are fully as cold as they are in Colorado, will scarcely pass thru our Colorado winters on account of the drouth or lack of moisture, which prevails most commonly in our late winter and early spring conditions, accompanied by wind. Even winter emmer, which is considered a hardy crop, will not endure these dry land winter and early spring conditions as well as winter wheat and winter rye. Winter barley will suffer a mortality in such seasonal conditions all the way from complete killing out to a killing out as high as 70 to 80 per cent. Winter oats will not stand the winters at all. Yet three of these crops are grown in regions of more severe cold but having a different type of late winter and early spring condition of dryness and wind velocity.

It is also noticed in Colorado that winter-killing is much more severe on lands which have not been properly prepared than on those lands which have been properly prepared. **Lands which have been prepared in June or July and which are well stored with moisture show a very much lower winter-killing than late plowed lands. In our opinion this is due to the better establishment of a root system and a greater vigor in the plants which has been brot about by a better protection of moisture supply which also looks to the protection of the growing young plants.**

Observations on these points have been under way for something over eight years under a great variety of Colorado conditions, from the most extreme dry, windy plains counties to the counties found in some of the mountain valleys where snows protect the surface during periods of three and four months.

Summer Fallow Necessary

E. R. Parsons, Dry Land Farmer

The principal cause of winter wheat killing is want of moisture. On my ranch in Colorado I raised this crop in a small way for chicken feed for twenty-four years. Every crop was good but one. Two months of zero weather without a snow covering was the reason. The crop was about half.

When the land is properly prepared according to the summer fallow method and moisture conserved I do not believe the failures amount to more than one in fifteen years.

Philip Held of Lincoln county a year or two ago reported to Western Farm Life that with the summer fallow system he had averaged thirty bushels for ten years. There are many others, but I cannot recall their names at present. Many dry land farmers wish to raise crops of winter wheat without the trouble of the fallowing and it is quite true that they often get crops, but it is not a safe method and I have never indorsed it.

The reason that it is not safe to rely on the fall moisture for winter wheat without previous conservation lies in the fact that the autumn moisture cannot be depended on. I have known the ground to stay dry for three months at a time and when the snow came it was too cold and dry to wet it. Two inches of snow may fall in December without even wetting the ground. It will thaw a little in the middle of the day on the top and some of this will evaporate into the air, and this process may continue with freezing at night until it is all gone.

Very intense cold, especially without a snow covering, may injure any crop, and this happens more often in the northern dry farming states than in our latitude; but a crop suffering from drouth will freeze out very easily, for the minute the thaw comes, if the plants have no moisture to recuperate on, they are done for.

This is the trouble with fall plowing for winter wheat and stubble planting in corn, etc., without any plowing at all—one is about as bad as the other. The wheat is too much on the surface. The corn has used up most of the moisture, the growth is scanty and affords no protection when the cold weather comes. In cold weather such crops may die even under a snow cover for want of moisture which nothing can supply but a thaw.

My method of raising winter wheat which has proven satisfactory to those who have tried it, consists of plowing eight to ten inches deep when the weeds are about six inches high in June, checking the field with the disk to catch the summer rains, repeating when necessary to keep the weeds down, smoothing the field and planting the seed three to four inches deep in August and harrowing in the spring if conditions demand it.

The deep plowing and conserved moisture together with early planting causes vigorous top growth, which catches snow and forms a thick mat which covers and protects the roots when zero weather approaches. The deep planting of the seed encourages deep rooting, which minimizes the injury from frost fissures, but land which naturally cracks and heaves in winter (of a certain clayey nature) should never be used for winter wheat.

There are certain combinations of sudden heat, cold, drouth and winds, etc., which may, once in a great while, kill out any crop, even alfalfa, but there is little doubt that much of the damage caused last season was the effect of too much severe weather on shallow rooted crops.

Wheat Dies of Thirst

Dr. Vernon T. Cooke, former Superintendent Wyoming Dry Land Demonstration Farm

Lest we forget, let us not overlook the fact that as a rule no two seasons are exactly alike. Our falls, winters, springs or summers vary, and vary very much more than the ordinary observer realizes. Admitting this, we must take into consideration that our land and our growing crops are greatly affected by these changes. Therefore our preparations for big crops may be more or less futile, due to a change of climatic or weather conditions over which we have no control, consequently no specific rules can be laid down as to which or what is the best plan to get results.

Winter-killing, as the term is usually used, is in some instances a misnomer, because large areas of wheat sown in the fall are not affected by the winter weather directly. That is, the failure of the plant to live is not always due to a severe winter, as most of us understand the term, but is due to thirst—lack of moisture. For example, the year 1916 was a dry one in many parts of the Middle West. The crops, tho, were in many instances very good, remarkably so considering the dry season. This was undoubtedly due to a considerable amount of moisture which remained in the soil from the year 1915, which was an abnormally wet season.

In the fall of 1916, winter wheat was sown on corn stubble and on ground which had been in grain (wheat, oats, etc.) without cultivation or plowing. The fall rains were very light; enough to start the wheat, and the prospects, apparently, were of the best. When spring came the cry went out that most of the winter wheat was dead—winter-killed. It was true that considerable was dead, but really one should say it dried out.

This is easy to assert, but let us look into the subject a little further for some sort of proof. The crop and cultivation of 1916 practically used up the moisture in the ground. The stubble ground was compact and when the wheat was sown there was considerable stubble to catch and hold the snow; also, what rain fell in the fall percolated down and the evaporation was not so effective as on corn ground, therefore in the spring the stand was much better than on considerable corn ground. But why the difference? Corn is often cultivated too much. Many men have set rules to cultivate or plow corn so many times, some deeply, some shallow. They do not give any real thot why cultivation is or is not necessary. If we cultivate we lose some moisture, especially if we cultivate deeply and the season is dry. Winter wheat depends largely upon the fall moisture and if our crop is sown early much of this moisture is utilized by the growing grain, some evaporates, and when the moisture fails, the result can only be dead vegetation due to thirst—lack of moisture.

Another important factor is, much corn stubble is after a dry season loose; that is, not very compact; and if wheat is sown in a loose soil much moisture is lost.

The successful winter wheat grower recognizes certain rules which undoubtedly help him to attain his main object, namely, big crops: a firm seed bed, with a maximum of moisture, seed of strong vitality, sown fairly deep with a press wheel drill, early enough in the fall to get good roots.

Much winter wheat is condemned in the spring because it is apparently dead. Some of the sickest looking winter wheat in the spring often makes forty bushels per acre.

There are of course other factors whereby we fail with our winter wheat, such as the roots being broken due to freezing nights and warm days, and the plant being smothered by a heavy coating of snow, which melts from the effects of the sun and is made into an (for the time) impervious coating of ice, thru which air is excluded from the growing plant, and also, sowing too shallow. It has been said by an eminent agriculturist that he did not know who started the heresy of sowing winter wheat deeply. This was asserted many miles away from this gentleman's home. It probably was better to sow shallow where he came from, but it is absurd to apply any set rules to agriculture. One moment's thot will tell anyone that there are different soils which require different treatment and not always the same climatic conditions prevail during the various seasons.

Kansas Expert's Opinion

Prof. S. C. Salmon, Crops Specialist, Department of Agronomy, Kansas State Agricultural College.

There are few important agricultural problems concerning which so little is known as the cause of winter killing of grain crops. Why, for example, is wheat hardier than oats, barley, and emmer but less hardy than rye? Why does wheat kill out in some winters and survive in others that are colder and apparently severer? Why does early sown wheat survive best in some seasons and poorest in others? Why does wheat on high ground and exposed ridges kill out most in some cases, while in others the low land fields are the first to suffer?

Science has so far failed to fully answer these and similar questions. In fact, little attention has been given the subject by investigators, although the loss from winter killing runs into millions of dollars annually.

Probably there are several causes of winter killing. It is reasonably certain there are at least four, viz., heaving, smothering, physiological drouth, and the direct effect of cold on plant tissue. Winter drouth and blowing of the soil may also be mentioned.

Heaving — Heaving is probably the most common cause of winter killing east of the Mississippi river, but seldom or never occurs in semi-arid regions. It is caused by alternate thawing and freezing of water in the soil. This lifts the plants and exposes the roots to the air. Low lying, poorly drained fields are especially likely to be injured by heaving.

Smothering — Many farmers have observed that a covering of ice over the ground or a very deep crusted snow may kill the wheat. The injury is supposed to be due to lack of air and therefore is known as smothering. In some foreign countries cattle are driven over fields in which the snow is crusted over. This breaks the crust and permits air to reach the plants.

Physiological Drouth—Plants are unable to obtain water from a frozen or cold soil, at least only in small amounts. The leaves, however, may be exposed to wind and sunlight and transpire water very rapidly—which, because of the frozen soil, cannot be replaced. In other words, the plants may suffer from lack of water even though the ground contains plenty of it in the form of ice. This is known as physiological drouth. If continued for any length of time the plants wilt and presumably in time would die.

Physiological drouth is known to kill shrubs and trees but has never been proven to kill wheat, largely because in practice it is very difficult to distinguish between physiological drouth and true drouth.

It is well known that very low temperatures kill all plant tissue in a growing condition. The killing of fruit buds that start too early in the spring is a familiar example. Likewise a warm period in winter may start wheat to growing, making it more easily killed by hard freezes that follow.

It is not known how low temperatures wheat will survive if in a dormant condition. Fair crops of winter wheat have been produced in central Alaska where the air temperature is sometimes as low as 60 degrees below zero. This is exceptional, however, and occurs only when the grain is well protected by snow. Usually winter wheat does not prove profitable where the average minimum temperature during the coldest months is lower than 10 degrees Fahrenheit.

Blowing of the Soil and Drouth—Blowing of the soil is a frequent cause of injury in western Kansas, Nebraska, eastern Colorado and similar areas in the great plains. The high winds that occur in the spring lift the soil particles and carry them rapidly across the field cutting off the plants and exposing the roots. Blowing occurs especially on fields that have been worked so much that the soil is pulverized into fine particles. It also occurs most frequently in dry winters and following dry falls when the wheat fails to get a good start.

Contributary Causes—There are many things that contribute to the foregoing primary causes. Late seeding usually increases the danger of winter killing. Poor seed, broadcasting rather than drilling, the use of poorly adapted varieties, all play a part. Contrary to common opinion, poor preparation of the ground is likely to reduce winter killing rather than increase it. This is because the ground is usually left rougher when poorly prepared, there is less danger of soil blowing, and the rough ground catches snow and protects the plants from the wind.

How to Prevent Winter Killing—It is evident from the foregoing that the methods that should be used to prevent winter killing must depend on the cause.

As far as known, there is no way to prevent smothering when an ice sheet covers the ground, but fortunately injury from this cause is not frequent.

Heaving is prevented to some extent by good drainage and early seeding. Rolling as soon as the ground is dry in the spring is beneficial in humid areas but is likely to prove injurious where the winter and spring months are dry.

In the northern part of the winter wheat belt, seeding in corn stalks is frequently practiced. The corn stalks catch the snow during the winter and so protect the wheat. A similar result is obtained by seeding in grain stubble. However, the latter is usually not considered a good practice because in favorable seasons the yield is much less than on well-prepared ground. Straw scattered over the ground in the early winter as a mulch reduces injury. It must not be spread on too thick, however, or it will injure the wheat rather than benefit it.

Experiments at the Kansas station show that probably the most practical and certain way to prevent winter killing is to seed in shallow furrows somewhat similar to those made with a corn lister but smaller. In practice the furrows are 10 to 12 inches apart and 4 to 6 inches deep. The grain is sown in the bottoms of these furrows and hence is protected by the ridges on both sides. The furrows catch snow which protects the plants from extreme cold. Also the ground is left very rough which, as every farmer in the Great Plains knows, tends to prevent soil blowing.

Grain so planted also has an advantage in dry falls. It can be planted deeper in the ground where there is likely to be moisture and if light rains occur, the water is directed to the bottom of the furrows and so insures better germination.

Undoubtedly this method of seeding would be more extensively used but for the fact that no drill suitable for seeding in furrows is on the market. This fault undoubtedly will be corrected in the near future when the advantages of seeding in this manner are recognized.

The licensing of fruit and produce dealers will increase the confidence of producers as well as consumers. It will be an incentive toward greater production.

Denver Stockyards Now Most Modern in Country

NEARLY A MILLION DOLLARS SPENT IN NEEDED IMPROVEMENTS

-MPROVEMENTS and enlargements at the Denver Stockyards just com- pleted have necessitated an expen- ture in the last two or three years of early $1,000,000. The magnificent new xchange building, which represents an itlay of several hundred thousand dol- rs, is finished, as is the concrete heep building, both structures being e last word in convenience of ar- ngement and quality of material. hese improvements, as well as the aving of the yards, the replacement of e old wooden chutes with concrete ructures and the general enlargement f facilities for handling livestock of ll classes, have been made necessary y a constant growth of business.

The old Exchange building was for ome years inadequate to the demands nd during the rush hours there was onfusion that often hampered the ransaction of business. In the yards onditions were often worse, especially uring a heavy run of sheep, for which lass of stock the acilities had long een outgrown. Dur- ng the rush on the heep market last all the yards were iterally smothered vith live mutton, he cattle pens and 'leys taking the verflow from the heep pens, which iid not hold a ourth of the offer- ngs. The new sheep livision, with its wo-decker concrete uilding covering a city block, will care for 200 carloads at a time and a day's run of 50,000 can be provided for with- out interfering in the least with cattle or hogs. A concrete dipping plant has been erected, with an escalator that carries the sheep from the vats to the draining pens with- out effort. The sheep division is now the best in the United States, from the standpoint of conveniences, and fully equal to the business of a market that is located where the range and feeder men meet.

Improvements have also been made in the hog division, which is now able to handle any size run without confusion and loss, as covered pens have been provided with paved runs that can be kept clean and dry.

Paving has also been finished in the cattle pens and enlargements have been made that give the cattle division a capacity of 25,000 head at a time without undue crowding. Five scales are provided, so that delays are cut out and cattle can be handled more expeditiously and safely than at any other yards in the country.

The lighting system has been improved and extended, and shippers will find the yards at night as light as during the day.

Concrete watering troughs are another improvement, these being arranged with a view to convenience and perfect sanitary conditions.

The new Exchange building was erected in front of and as an extension to the old structure. It is ornamental in character, but built primarily to afford the best facilities for conducting business. It has four floors and is provided with three elevators, the aim being to furnish unhampered and rapid service to every tenant.

The last of the few buildings remaining of the original yards was recently torn down, and there is now nothing left of the old plant. Every new structure put up has been built in accordance with the most modern plans, consequently it may be said with absolute truth that no other stockyards in the country has facilities that equal those of the Denver yards for convenience, practicability and safety in the handling of livestock, and only a few beat Denver for size.

These improvements have been possible only because the stock shippers of the mountain states have taken advantage of convenient transportation to their home market. There has been no overbuilding and little anticipation of future demands, consequently it is safe to say that improvements must continue to be made. Packers have kept pace in enlarging their plants with the market growth, and today's capacities are double what they were a few years ago.

All of this has been due to the shipper's desire to get value received for his stock and save shrinkage. The long haul is being cut out because it pays to do so. The appeal of the Denver yards is put upon a business basis and not on the plea that the shipper should patronize his home market merely because it is a home market. He has been shown that it is advantageous; he has in turn shown his appreciation of the fact by continuing to ship here and, consequently, it has been necessary, in order to hold the business, to extend the facilities.

One of the most encouraging features of development is the fact that the patronage of the stocker and feeder buyer is increasing. Denver has become the great market place where the range man brings his grass fed stuff to the direct attention of the farmer who fattens cattle. Both are finding the exchange profitable, because transportation has been cut to a minimum, thus reducing one of the most serious wastes in the business of meat production. The development of a market where the feeder can pick up cattle in good condition, fresh from the grass of the mountain ranges, has resulted in larger finishing operations in proximity to this market, in districts that grow the feeds. This naturally comes back to Denver for slaughter..

Interior View Upper Floor New Sheep Market Building. This Structure Is Built of Reinforced Concrete and Is Absolutely Fireproof.

Seven Foot Corn Grown at Seven Thousand Feet

CLIFF DWELLERS A THOUSAND YEARS AGO WERE CORN PIONEERS

THE other day the writer saw an ear of blue-back corn hanging in the window of a land dealer's office. Affixed to it was a tag bearing the legend that this corn was grown from seed found in a hermetically sealed jar in the Cliff Dweller's ruins in southwestern Colorado and that the seed was at least a thousand years old. Several months ago a Denver newspaper published an article to the effect that a lady in Kansas City had grown fine corn from a kernel of a thousand-year-old corn found by some army officer in the Cliff Dweller's ruins.

These little touches of romance attached to little kernels of corn sometimes lead to big things for dealers in spurious seeds. Some of us remember the story of the Alaska Miracle, or Seven-headed Wonder wheat that traced its ancestry back to the tombs of the Pharaohs of ancient Egypt. It was a good graft while it lasted but some practical fellow came along and spoiled it.

Up at the State Museum on Capitol Hill visitors may see corn and beans that were really taken from the ruins of the Mesa Verde. They are wonderful to look at because one's thots are led back to the vanished race that produced them. The beans are of a brownish pink, and almost as large as some of the varieties of the Mexican bean of today. The ear of corn is a tiny thing compared to modern corn and nothing like the blue-black corn of the land man's window. Yet this little ear of corn tells a more wonderful tale than does the blue-black ear, because the story told by the tiny ear is true and the other is false.

We know the germ of life in grain cannot survive a thousand years, nor yet a hundred years. What a remarkable biologic discovery it would be if a plant would grow from seed that really had been harvested by the lost race of the southwestern mesas! That cannot be, but still we say it is wonderful to look at the mummy of an ancestor of King Corn. The shriveled grains on a cob as big as your middle finger fed a peace-loving people with whom the art of agriculture had reached a high state of development. These people grew corn at altitudes today considered too high for corn, yet it ripened for them at seven to eight thousand feet.

A few of our farmers who refuse to be bound by the rules of the game are pushing the corn line skyward with some success. Some seasons the corn ripens, in other seasons the frosts nip it too early, but it still makes good forage. The tiny ears of corn from the Mesa Verde ruins bid these farmers persevere. Corn improvement is modern; a development of only half a century, carried on under semi-arid conditions, and we have only of late been breaking over the imaginary western and northern limit of corn production. Now one sees silos on many dairy farms at altitudes of over 6,000 feet and fairly ripe corn goes into them.

This fall, frost held off exceptionally long in the Arkansas Divide country of Colorado. About the middle of September farmers were frantically cutting their corn and putting it into the silo, because the average first killing frost date was at hand. But the freeze did not come till a month later.

The little flint corns, big brothers to the Cliff Dwellers' corn, come nearer maturing in ninety days than any other kind, but I saw this fall some fields of tall corn grown from Minnesota seed that got past the roasting ear stage. This was its second season in Douglas county at an altitude of 7,000 feet, on the farm of James P. McEnroy, near Larkspur. It was an eight-acre field on the slope of a pine-covered mountain; an unusual place for a field of seven-foot corn. This corn has gone into a 145-ton concrete silo since the photograph used on the cover page was made on September 11th, and it will soon be feeding a herd of 25 to 30 milking Shorthorn cows, one individual of which was high test cow for Douglas county in a three-months' test. She made an average of 60 pounds of butter fat on upland pasture and Farmer McEnroy was getting 68 cents a pound for butter fat at that time.

He was cutting his White Australian corn—one of the short, high altitude varieties—the day I visited the place. About 60 acres of a total of 960 is under the plow, the balance being hay land and mountain pasture. Forty acres of alfalfa makes two cuttings a year of short, tender, leafy hay, grown with the natural rainfall.

It is the observation of farmers that the corn they have in the higher altitudes—that is, about 5,500 feet, under

Turn to Page 14

Put Up the Winter Meat Supply

STANDARD RECIPES FOR PORK AND BEEF

Hog killing time is here and on many a farm the winter's meat is now being put up. Western farmers do not confine their home supply to pork, but many slaughter a beef which is passed around the neighborhood for corning or other forms of preservation for later use. The following recipes for curing both pork and beef have been tested and found satisfactory, tho they are by no means the only way of providing a meat supply for winter.

Plain Salt Pork—Rub each piece of meat with fine common salt and pack closely in a barrel. Let stand over night. The next day weigh out 10 pounds of salt and 2 ounces of saltpeter to each 100 pounds of meat and dissolve in 4 gallons of boiling water. Pour this brine over the meat when cold, cover and weight down to keep it under the brine. Meat will pack best if cut into pieces about 6 inches square. The pork should be kept in the brine till used.

Sugar-Cured Hams and Bacon—When the meat is cooled, rub each piece with salt and allow it to drain overnight. Then pack it in a barrel with the hams and shoulders in the bottom, using the strips of bacon to fill in between or to put on top. Weigh out for each 100 pounds of meat 8 pounds of salt, 2 pounds of brown sugar, and 2 ounces of saltpeter. Dissolve all in 4 gallons of water, and cover the meat with the brine. For summer use it will be safest to boil the brine before using. In that case it should be cooled thoroly before it is used. For winter curing it is not necessary to boil the brine. Bacon strips should remain in this brine four to six weeks; hams six to eight weeks. This is a standard recipe and has given the best of satisfaction. Hams and bacon cured in the spring will keep right thru the summer after they are smoked. The meat will be sweet and palatable if smoked properly, and the flavor will be good.

Corned Beef—The pieces commonly used for corning are the plate, rump, cross ribs, and brisket, or, in other words, the cheaper cuts of meat. The loin, ribs, and other fancy cuts are more often used fresh. The pieces for corning should be cut into convenient-sized joints, say, 5 or 6 inches square. It should be the aim to cut them all about the same thickness so that they will make an even layer in the barrel.

Meat from fat animals makes choicer corned beef than from poor animals. When the meat is cooled thoroly it should be corned as soon as possible, as any decay in the meat is likely to spoil the brine during the corning process. Under no circumstances should the meat be brined while it is frozen. Weigh out the meat and allow 8 pounds of salt to each 100 pounds; sprinkle a layer of salt one-quarter of an inch in depth over the bottom of the barrel; pack in as closely as possible the cuts of meat, making a layer 5 or 6 inches in thickness; then put on a layer of salt, following that with another layer of meat; repeat until the meat and salt have all been packed in the barrel, care being used to reserve salt enough for a good layer over the top. After the package has stood overnight add, for every 100 pounds of meat, 4 pounds of sugar, and 4 ounces of saltpeter dissolved in a gallon of tepid water. Three gallons more of water should be sufficient to cover this quantity. In case more or less than 100 pounds of meat is to be corned, make the brine in the proportion given. A loose board cover, weighted down with a heavy stone or piece of iron, should be put on the meat to keep all of it under the brine. In case any should project, rust would start and the brine would spoil in a short time.

Hog Killing on Colorado Farm

It is not necessary to boil the brine except in warm weather.

If the meat has been corned during the winter and must be kept into the summer season, it would be well to watch the brine closely during the spring, as it is more likely to spoil at that time than at any other season. If the brine appears to be ropy or does not drip freely from the finger when immersed and lifted it should be turned off and new brine added after carefully washing the meat. The sugar or molasses in the brine has a tendency to ferment, and, unless the brine is kept in a cool place, there is sometimes trouble from this source. The meat should be kept in the brine 28 to 40 days to secure thoro corning.

There is no uniformity in the directions for smoking meats, some advising a smoke of three or four days, others as long as ten days or two weeks. And down in Virginia, where the famous Smithfield hams are cured on the farm, they are left in the smoke as high as 30 days. This must be left to the judgment of the farmer and the kind of smoke used. On the plains where wood is as scarce as gold, corncobs may be used. In irrigated sections where fruit trees are plentiful, green apple tree wood makes the finest smoke. In the mountain sections the smoke can be made with green ash, or if not available, green quaking asp will answer the purpose.

There is on the market a preparation known as Liquid Smoke which has proved satisfactory and is coming into quite general use in preserving meats, consequently the farmer who has no smoke producing material, or who doesn't want to take the time and trouble to cure with real smoke, can get practically the same results by applying a chemical preparation. And for the man who hasn't an old fashioned smoke-house there is a portable metal device on the market.

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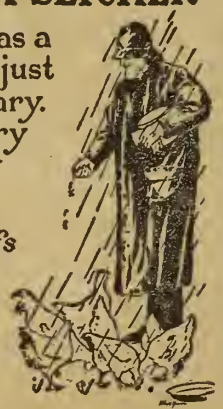

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Sweet Clover Questions

ould you please advise me if I could grow t clover on my farm which is located at ley, Idaho? My land is nearly all a north rich black mountain loam, rainfall about ches or less. When is the best time to and how much per acre?—G. E. B., Downey,

n should certainly be able to grow e sweet clover on "rich, black mountain loam" where the rainfall averages ches. On the north slope, the snows n longer and you thus get the benefit most of the winter moisture, unthe slope is so steep that there is a percentage of runoff. In that case t clover would be one of the best s you could use to hold the soil and vent washing. If you will read Dr. ke's article again you will find that says amount of seed per acre varies rding to the quality of the seed and ure of the land. So, if your soil is t you say, very rich, and you can get ed seed of high germination, you can l rather lightly. If you sow broadt early in the fall, 20 to 30 pounds per would be plenty. We would say, er under 25 pounds than over for rich l. You will probably do better now waiting till next spring and, after d preparation, such as advised in Dr. ke's article, sow with a press wheel l six to eight pounds per acre. Do sow until your growing weather is at d, but have your land well prepared and clean, keeping the weeds down by cultivation. Then with the winter moisture in the soil, and good seed, you should have no trouble in getting a stand.

Replies to J. H. F., Encinoso, N. M.

Is white sweet clover good hog pasture?

Sweet clover is almost the equal of alfalfa for hog pasture. Experiments made at the Iowa Agricultural Experiment station showed sweet clover pasture to carry more pigs per acre, making cheaper gains and a greater net profit than those pastured on either red clover or rape.

Is the hay as good as alfalfa hay?

When sweet clover hay is cut at the right time and cured properly all classes of stock eat it with relish. It is rich in protein and gains made on it are comparable with those made on alfalfa. The first year's cutting of hay is almost as fine stemmed and leafy as alfalfa, but if not watched the second year and cut just at the right time, it is apt to be coarse and stemmy.

Will stock fatten on the pasture?

Sweet clover alone will not be sufficient. Corn or other grain should be fed with it for fattening.

How tall will it grow on dry land?

Three to four feet, but it should be cut for hay when 20 to 30 inches high.

About how much will it yield on dry land?

It will make one cutting of hay. Usually the tonnage on dry land is heavier than alfalfa under the same conditions.

Is it good to produce milk?

It is almost as good as alfalfa as a milk-producing feed.

Does it contain protein and how much?

Crude protein in green sweet clover is 4.4 per cent; in alfalfa green, 4.5 per cent. Sweet clover cured as hay contains 17.6 per cent of protein, while alfalfa hay contains 17.4 per cent.

Is sweet clover a drouth resister?

One of the strongest recommendations for the plant is its ability to withstand drouth.

Please tell me if yellow blossom sweet clover can grow in dry land and can be cut the first year for hay?—A. S. Dulce, N. M.

Yellow sweet clover is not recommended for dry lands. It does not make as good a root growth as the white and it will not stand as much dry weather. It is preferred by some because it makes a little finer quality of hay, but it is outyielded in quantity of hay by the white variety.

Getting Rid of Loco

How can I get help against loco weed? —S. V., Walsenburg, Colo.

If the loco is in fenced pastures much can be done toward getting rid of it by digging up the plants, but if on the open range this is out of the question. The only way is to keep stock away from badly infested pastures. The eating of loco weed is a habit with stock that is formed when pastures are poor and the animals are attracted to the loco. After they once get a taste of it they develop an appetite for loco that causes them to eat it in quantities that will finally cause them to become "locoed." If caught eating loco animals should be taken out of the pasture. If you have animals that are affected they should be put where they can't get loco, because treatment will not help them as long as they have access to the weed. The first thing to do is to give an afflicted animal a dose of raw linseed oil as a physic and feed it well on hay and grain. For horses and cattle mix one-half ounce of Fowler's Solution of Arsenic with the feed, giving this treatment twice a day not longer than two weeks. If this does not help, the strychnine treatment must be given under direction of a competent vet erinarian.

Rights of the Wife

As I had used my right, I let my wife file on a homestead, 160 acres, that I located. She paid expense of filing herself. She proved up a year ago and got deed. She never got any money out of crops because she never worked in field. I used money for horses and implements, etc., rest I put in the bank in my name. We have two boys, aged 12 and 14. My wife left, as she is not satisfied because there is no house, just one room and lean-to for a kitchen. She drew check on bank. As money is in my name, can I prosecute her for forgery for this? The boys help in the field. Can she force me to send them to school? Can she take them when she gets ready? I send them to school when I can spare them. Can she raise money on this place? If she gets divorce, how much land must I give her? I did all the field work with the boys.—"Square Deal," Colo.

Your question states that your wife owns the property in fee. It is therefore hers and not yours. Under the facts stated by you, you cannot prosecute for forgery. Forgery is the fraudulent material alteration of a writing to the prejudice of another. The boys of school age can be made to go to school. Your wife cannot take the children against your will. The children are jointly under the control of yourself and wife. Your wife could raise money on the place. In Colorado a married woman can own property in her own right. The court, in case of divorce, would fix the amount of alimony payable by the husband.—Hamlet J. Barry, attorney-at-law, 724 Equitable building, Denver.

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The Non-Partisan League

Paid organizers for the Non Partisan League, a farmers' political organization having headquarters in St. Paul, have been at work for some time in Colorado and neighboring states, asking our farmers to hand over sixteen dollars as a membership fee, in return for which they promise a program of reforms to be put thru the various legislatures. This program includes the following measures:

State ownership and operation of grain elevators and warehouses.

State ownership of flour mills.

State owned and controlled cold storage and packing plants.

State hail insurance for crops.

State standardization in cleaning and grading grain.

Exemption of farm improvements from taxation.

Establishment of state owned and state operated rural credit banks.

Non-partisan primary election law.

An effort was made to put thru a portion of this program last winter during the session of the North Dakota legislature but it failed, mainly because of opposition in the senate. The league elected the governor and a majority of the lower house and was in almost complete control of the state machinery of government, with the exception of a minority in the senate, which proved strong enough to defeat the state ownership bills.

At the close of the legislative session the league decided to invade other western states and a campaign of solicitation has been carried on ever since. This campaign was progressing fairly well until Senator La Follette and President A. C. Townley of the league "spilled the beans" during a so-called national convention on the food situation held at St. Paul recently. The address delivered on that occasion by Senator La Follette is now the subject of investigation by a congressional committee which is to pass on his fitness for continuing a member of the United States senate. It was the most rabid of all his seditious speeches.

Naturally the league as a whole could not be held responsible for the utterances of an invited guest, but unfortunately for its future, President Townley not only failed to stop the Wisconsin senator, but himself indulged in criticisms of the nation's war aims in such measure as to indicate that he was tarred with the same stick. Since then he has had ample time to think things over, but so far as we are aware he has not repudiated the statements of La Follette and they, as well as his own utterances, stand today as the official opinions of the Non Partisan League in reference to the conflict with Germany.

Briefly these views are that the torpedoing of the Lusitania, with the consequent death of some eight hundred innocent men, women and children, was justified and that this nation has no cause for entering the war against the arch enemy of humanity.

Organizers of the league in this and other states have made lame apologies or disclaimers for Townley which is natural, as these organizers are getting members on a basis of salary and commission. Western Farm Life has been reliably informed that the organizer's commission on every sixteen dollar fee is four dollars.

Regardless of whether a farmer believes it a wise measure for the states of Colorado, Wyoming, Idaho, Utah, or New Mexico to own the mills, elevators and packing houses, we are certain that any organization, no matter what its political aims, whose chief officer and originator has aligned himself voluntarily with the country's enemies, has no claim whatever on the confidence or financial support of any loyal citizen.

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The Land Bank and Grazing

"We cannot make loans on straight grazing land. In this connection we wish to say that the land must be cultivated on a scale commensurate with the size of the tract, opportunities and like conditions."

This is a quotation from a letter written by an officer of the Federal Land Bank at Wichita to a National Farm Loan association in western Kansas announcing a policy that, if adhered to, will show that the district bank officers are unable to grasp the agricultural problems of their own territory. Every agency engaged in the effort to put dry land agriculture on a permanent basis has for years been insisting on livestock as the foundation. Livestock without grazing is impossible. Grass is the dry land farmer's best asset; his most profitable source of income, because it is handled with the least outlay of labor, at no cost to him whatsoever except fencing, and brings him a revenue in beef or milk that is practically clear profit.

The law under which the farm loan system is operating seems so absolutely clear on this particular point that it is difficult to see how the officers of the bank can fall into the error of excluding grazing land from consideration. Here is the way the law reads: "In making said appraisal the value of the land for agricultural purposes shall be the basis of appraisal and the earning power of said land shall be a principal factor."

What are "agricultural purposes?" The answer is so simple that it hardly needs to be expressed, but it can be stated in other words: "farming purposes." That doesn't mean plowing the land, it means using it to the best advantage. The second clause of the sentence quoted from the law is even more clear in its application to this situation, namely, that the earning power of the land shall be a principal factor. On what shall we base the earning power of a western Kansas or eastern Colorado dry land farm? On the bushels of wheat or pounds of beans that are produced per acre? If this is to be the basis; in other words, if we are to put a premium upon cultivating the land to cash crops, then we might as well say good-bye to the dry land districts, for on that basis they will surely repeat the experience of two former settlements of the semi-arid plains and be sold out for taxes, or be foreclosed by the government on their federal farm loan mortgages after a series of dry years.

No greater blunder could be made by the land bank than to fail to take grass land into proper consideration, for grass is the first essential. Without it we cannot have a successful stock farm. With grass, plus forage crops, our farmers are assured of a living from meat or milk and of the continued fertility of their lands by the utilization of the manure. If the officers of the land bank do not have the knowledge of these fundamentals so necessary in the consideration of all problems arising in connection with dry land agriculture, it is apparent that the Colorado Farmers' congress and the farm bureaus of western Kansas should get together and adopt measures that will convince them of their mistake.

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Peaches Rot on Trees

With all the care taken to provide cars, help and facilities for handling the peach crop this year, the Paonia district experienced a loss of probably two or three thousand tons. The reasons were somewhat unusual. When the peach harvest began there were practically enough cars on the side tracks in the fruit districts to transport the entire crop. Help was scarce. There was no standard wage scale. The railroad company paid considerably less per hour for icing cars than the growers were paying for picking peaches. The result was nearly all the help went to the orchards. Peaches were picked faster than iced cars could be furnished, and buyers quit taking the fruit. To be fit for shipment peaches must be picked when ready. Before an adjustment could be had the fruit was too ripe to ship and out of 700 or 750 cars of peaches grown in the district less than 450 were marketed, leaving the fruit to rot on the trees. There were not even enough hogs in the neighborhood to eat them.

At Paonia stands a canning factory established some years ago at considerable expense, but driven out of business by certain jobbers interested in handling fruit from outside the state.

The present experience is only another object lesson of what this paper has said several times before—there must be factories to handle the surplus or farmers will continue to pull up their trees and go into other branches of farming. The fruit industry is a very important one and should make a great growth in coming years. Our people cannot, however, market only a portion of their crop and ship long distances to market to compete with growers who have no distance to ship and who are able to save their entire crops. The greatest manufacturing opportunity in Colorado is in the fruit and vegetable districts on the Western Slope, and our commercial organizations should lose no time in calling attention to this matter, and saving to the state one of its most promising industries.—E. M. AMMONS.

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Uniforms For County Agents!

An attempt is being made by one of the bureaus of the United States Department of Agriculture to force the county agriculturists to wear a uniform. The reason assigned for this is that the county agents are engaged in a work necessary to the prosecution of the war, namely, the stimulation of food production and that, therefore, they are entitled to a special designation which, while it may not lift them above the civilian, nevertheless would indicate that they are serving the nation.

County agriculturists are a very necessary part of our agricultural machinery. The service they render, if they are capable, practical men, is of great importance to the nation, either in time of peace or war.

There are two strong reasons, however, why they should not be compelled to wear a uniform—and we use the word compelled advisedly, for we know that many of them will object to donning a uniform. One reason is that the uniform should be restricted to the use of those engaged in some branch of actual war service. Those engaged in the making of munitions or the production of food are not entitled to wear a uniform suggestive of military service. If the county agriculturist is entitled to a uniform because of his occupation then every farmer has a right to one.

The other reason is more important, and one that should be most apparent to those in authority at Washington responsible for the suggestion. It is this: the county agent work is cooperative between the states, counties and the federal government. Regardless of the proportion of the expense borne by the federal and county treasuries, the county agent is responsible, in the last analysis, to the farmers in whose service he is employed. It is the farmer whose taxes, whether paid to the state or nation, make appropriations for this work possible and the county agent, if he knows his business, says to the farmer: I am at your service, you are paying my salary and expenses; what can I do for you?

This attitude cannot be maintained if the county agent enters the farmer's gate in a government uniform, with a federal tag on his coat lapel. This immediately brands him a bureaucrat and the West has an aversion to bureaucrats.

We hope we are mistaken, but it looks very much as tho the idea back of the plan is not so much to honor the county agent and his work as to fasten the stamp of federal control upon it. The gentlemen at Washington who guide the destinies of the Department of Agriculture should investigate the States Relations Service and put a quietus upon an attempt to weaken a service that, if properly administered, is of great benefit to the nation, but if burdened with bureaucratic red tape will find a cold reception from county commissioners when it comes to putting up their share of the money.

We realize fully the difficulties that are in the way of any service that involves division of authority, but when those concerned in its administration have a sound sense of relative responsibilities, and an appreciation of the farmer's viewpoint they can succeed.

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New Feature of Smut Control

An interesting report concerning smut control in wheat comes from A. E. Wade, county agriculturist for Lewis county, Idaho, showing the relationship of dates of planting to amount of smut infection. It is as follows:

"A careful record of methods, dates of planting, has been kept with the idea in mind of ascertaining just what influence time of planting had on the amount of smut infection. From data gathered from 75 fields in the past two weeks, grain sown prior to August 12 is especially free from smut, the average being less than 4 per cent, while the percentage of smut in fields planted after that date to the first of September was astonishingly variable, running from 4 per cent to 60 per cent, the general average being about 13 per cent. Where grain was sown during September, the range was from 13 per cent to over 40 per cent. For wheat planted in October the average gradually dropped; and for fields planted as late as the 3rd of November, only 2 per cent of the wheat was affected. The high general average of smut in fields sown during September show that as harvest progressed, the fields became more generally infected until after a general rain. Figuring from the basis of the data already gathered, the total loss this year from wheat smut in the county will exceed $50,000 and had it not been for the 5,000 acres of grain which was seeded early, following the demonstrations of last year, the loss would have exceeded $70,000.00. In other words, an approximate saving of $20,000 has been made as a result of the demonstrations of a simple method which entails seeding before the harvest. Practically all grain sown in Lewis county is treated with either formaldehyde or blue stone so that the low percentage of smut in the demonstration plots must be due to the time of planting."

County Agent George R. Smith of Adams county, in his report to State Leader Lovett on the five community fairs held during the week of September 22, which included the Adena fair, says: "I feel that our fairs this year have been exceptionally successful. There were products exhibited at every fair which had practically never had more than a sprinkling of rain on them and which were first-class products. The products exhibited this year were superior to products exhibited at any of the previous fairs. A reason for the better exhibits is that they are using better cultural methods and are getting the best seeds located at these fairs for their next year's crop. It is not uncommon to hear one farmer inquiring of another as to whether he was going to have some seed for sale from that corn, or that wheat, or whatever it may be."

Comment by Farmer Putnam

OUR MISSOURI FRIEND WRITES ABOUT GOOD TIME HE HAD AT THE MONUMENT POTATO BAKE

HERB. HOOVER might git after them fellers down to Monument when he hears about that thar potato bake, but it won't do no good now; them potatoes is dun ett up. I got my share of 'em. Me and Lauck and Kezer and Sandsten and them other experts was on hand to tell them farmers how to eat baked potatoes. It's quite a art. The Monument people baked 'em in pits and when dinner time come they was forked out of the pits and we all had to grab what we could and run back to where we had our lunches parked, so's the spuds wouldn't burn our hands. That's where I had the advantage of Kezer and Sandsten. Them professors has got soft hands. Me and Lauck bein' plain workin' farmers, our hands was all callous and hard and the potatoes didn't burn 'em.

We ett up about 1,600 pounds of spuds—that's countin' everybody, not us experts alone. Before the dinner some of the crowd went out on a tour of the farms in the Monument district to see the dairy cows that Lauck brot in from Wisconsin. We visited Mangas's, McConnell and Barnes's, Shubarth's's and other's ranches, where we seen some mighty fine Holsteins and some good silos all filled up with corn that was fermentin' and makin' itself ready fur silage.

Me and Prof. Kezer was discussin' them different kinds of cows along the color line. I got a theory that the whiter a Holstein is the more milk he gives, so when I pick 'em out I pick them that hain't got much black. He sez color don't cut no figger—no more then the color of a man's hair and I've seen some mighty fine men that was bald headed. It ain't fur me to dispute what them professors sez, because they know a lot, but when it comes right down to the point they hain't got nuthin' on the rest of us. Nobody has been able to tell me why one cow is red and another one is white and black, and I was tellin' one of the farmers that and he sez:

"What do you care what color she is so long as she fills the pail? I'm willin' to milk a blue cow if she'll give me enough milk to pay fur the feed, labor and a little profit on top of that. Now you don't know why your whiskers is gray or your head is bald, do you, Putnam?" he sez.

"I sure do. And I also know why Josephine—that's my wife—has got red hair. It's to match her temper."

We was drivin' thru a country that was higher than 7,000 feet and I seen that all the farmers had more of their fall work done then they has back in Kansas or Missouri at the same time. You see the season is very short in them highlands and you got to make hay while the sun shines.

The farmers don't git their crops in the ground much before the first of June and sometimes they git a leetle more snow even that late. Summer comes all of a sudden and then the plants gits a hustle on theirselves, seemin' to know that the fall frosts come early. This year was a exception and bad weather kept a-holdin' off like if Old Jack Frost had been buffaloed by Hoover and was givin' everybody a chanct to git their crops made. Well, as I was sayin', plants hustles along in fine shape when warm weather comes and in a few weeks it's harvest time.

Then the farmer, havin' the same feelin' that time is short, gits a hustle on hisself and in about two weeks his last cuttin' of hay is in the stack, his corn is cut and siloed, his beans is ready to thrash and everything is snug for the winter, when he gits time to count his money and do other chores that he was too busy to do in summer.

Countin' money reminds me that they got a bank now in Monument run by Mr. Staley. It's called the Monument State Bank. Before they had a bank the farmers around there didn't know what to do with their money exceptin' to spend it. Now they put it away in the bank and write out checks.

The bank asked the farmers to bring in some exhibits fur potato day and I wisht you-all could a seen them products. It was a wonderful show of stuff growed in such a short time. I was up to Monument last May when the anemones was just showin' their blossoms thru the snow and they was still a bank of snow three feet deep in the main street and we-all had a lot of fun snowballin'. Well, right after that snow went off the farmers thot it was spring and they got their crops in, or started to, when along come another storm early in June that covered up everything just like it was December. I never seen so much Christmas weather as they had up over the Divide last spring. Some of the farmers thot the stuff was off and that because of the war in Europe we wouldn't have no summer. But they got fooled. That last June snow was the makin' of the crops. After that soaked in stuff come up and just humped along so's you could notice it growin' over night.

When we went into the bank on potato day it was a surprise to all of us to look at them big Burbank and Ohio potatoes, them field peas which makes fine feed fur stock, and corn, oats, barley and pinto beans besides

Turn to Page 11

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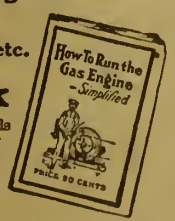

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Breeding Dairy Cattle, Article III.

IN-BREEDING: Every once in a while breeders receive letters ordering livestock with the stipulation that they shall be unrelated to an animal previously purchased. In a sense all animals of one breed are related, since all are descended from common ancestors; and every breeder of pure-bred stock breeds together animals belonging to the same family within the breed, this following a procedure called line breeding. Most good breeders resort also to in-breeding on occasion, and yet the prejudice against the practice is such that the average dairyman believes it is sure to result in weak offspring, misfits, and "knot-heads."

I am no advocate of continuous and ill-advised in-breeding; yet in-breeding is one of the most powerful weapons for good or evil that the breeder has placed in his hands. I am satisfied that the common prejudice against in-breeding results in continual shifting of type due to change of bulls, and that it sacrifices to the block many bulls that should be held for further improvement of the herd. In addition the purchase of a new bull every second year means the purchase of cheap bulls as a rule; whereas, if a bull is to be kept four or six years, even a small herd will justify the expenditure of several hundred dollars for a herd sire.

It is true that in-breeding has ruined more than one herd. But it is also true that in-breeding has established the well-known and profitable families of every breed of animal. If we understand both the advantages and the dangers of in-breeding we are in position to use the method carefully and with good results.

It is generally accepted that in-breeding does one thing—it establishes uniformly thruout the progeny characters found in the ancestors, whether these characters be desirable or undesirable. This is the essential feature of in-breeding. If you have a sire whose daughters are much better than their dams, and possessing no conspicuously weak points, it will usually pay to breed that sire back on his own daughters. You will then have a pedigree like this:

Sir Korndyke	Sir Korndyke Hengerveld	Lord Hengerveld Jolie Johanna
	Hengerveld Maid	Sir Korndyke Hengerveld Pontiac Maid

The bull calf Sir Korndyke, resulting from this mating possesses 75 per cent of the blood of Sir Korndyke Hengerveld and you can readily see that he should greatly resemble his sire in most characters. If Sir Korndyke Hengerveld has a mellow skin, Sir Korndyke is likely to have it. If Sir Korndyke Hengerveld has crooked hocks, Sir Korndyke is likely to have the same fault. Whatever is inherent in Sir Korndyke Hengerveld's line of ancestry is likely to be fixed in his son, because of the elimination of unrelated blood thru in-breeding. You must therefore use inbreeding thotfully and intelligently, but you should by no means discard it because of its dangers.

A special warning is necessary. Do not attempt to breed in-and-in,—that is, continue in-breeding generation after generation. You will run into two dangers, one being the fixation of whatever undesirable characters the race possesses—and there are always some. The other danger is a disputed one, yet is enough of a danger to warrant caution. It is the appearance of infertility or infecundity as the result of continued in-breeding.

The way for the ordinary cattle owner to in-breed is to go at it with courage for one generation and then quit. And be sure you have a sire worth using for in-breeding operations before you undertake them. With such a sire you will be astonished at the good results secured.—G. E. M.

Answer to M. S. B.

The name Holstein applied to cattle is simply a shortening of the official breed name, which is Holstein Friesian. The letters A. R. O. mean Advanced Registry Official. There are two divisions of the Holstein Advanced Registry, called the Official and the Semi-Official. With the official record there is a representative of the State Experiment Station present at all milkings during the test, whether it be a seven day, thirty day, one hundred and twenty day or complete year's test. In the case of semi-official records, the record is made for a year's time, but the representative of the experiment station is present only two days out of each month. The weights of milk certified to by the owner are taken for the other days of the month and the total fat for the month computed on the basis of the test secured by the official. The Advanced Registry office in charge of Malcolm H. Gardner at Delavan, Wis., has a system of checks based on long experience that serve to prevent padding of milk reports by the owner of cows under test. It is practically impossible to do it without being caught. The comparison of a number of full year official tests where the official was present at every milking during the year with the semi-official record on the same cows shows that there is a discrepancy of only a few pounds between the official and the semi-official test. The official test for the year is, of course, very expensive, so that the semi-official is the common yearly test. The commonest official record is the seven day record. The cow must have an official record before being entered in the semi-official division, so that as soon as a cow has a certificate from Mr. Gardner for the seven day test she is entitled to be labeled an A. R. O. cow.

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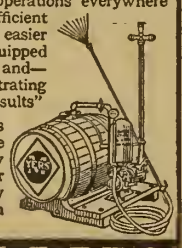
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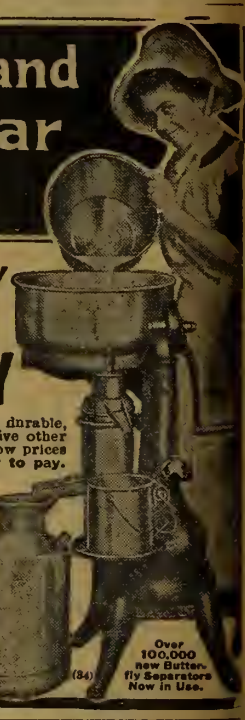
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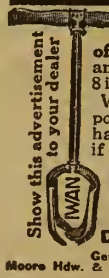
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Economy in Feeding Cows

H. Propps, University of Nebraska

THE present high prices of feed are causing considerable comment in dairy circles in regard the cost of milk production and the urns that might be expected from d consumed by dairy cows.

Naturally a close culling of cows is ely first to receive attention. Cerinly no cow deserves a place in the rd unless she will, with proper feed d care, produce enough to make her ofitable to the owner. The tendency produce milk being an inherited aracteristic no amount of liberal eding can make a high producer out a cow that has not inherited this ndency. Therefore, after a cow has ce demonstrated that she is not a ofitable producer she no longer mer- a place in the herd. Economy ould suggest that the feed she has en consuming (50-60 per cent of ich is used for maintenance) be ven to the better cows in the herd, us eliminating the maintenance exnse of an extra cow.

In case of the high producer, after aintenance has been provided for, e remainder of the ration is used exsively for milk production. Therere, even tho feed is high, it is the rictest kind of economy to feed this nd of a cow up to the limit of her pacity or as long as the milk proced by the added feed is worth more an the additional feed consumed. hat is, if one pound of grain worth 3 nts will produce 2 pounds of milk orth 5 cents, then it certainly is profable to add grain to the ration as rg as these results can be secured. 'ter maintenance has been provided r, one pound of a balanced grain ixture consisting of concentrates mmonly fed to dairy cows actually ntains protein and energy sufficient produce from 2 to 2.8 pounds of ilk, depending upon the quality of the ilk produced and the kind of concenates used in the mixture. Knowing, en, the value of the grain per pound nd the amount and value of the addional milk produced, it is easy to dermine at what point it ceases to be efitable to add more grain to the tion.

Perhaps the most common mistake in eding grain to dairy cows is the pracce of feeding each cow in the herd the me quantity regardless of the amount milk she is producing instead of egulating the grain according to the mount of milk produced per day.

Considerable waste of food may reilt from failure to balance rations. his is especially true if the ration appens to be low in protein; for, hile an excess of protein may be subtituted for energy, energy producing oods can not in any case take the lace of protein in a ration. The milk ow, therefore, may be limited to the rotein content of the ration even tho nergy producing foods may be present n excess. An economical ration is a alanced ration.

Another point in the economy of the eeding, and one that is especially imortant this year, is the liberal use of ultable roughage. Before feeding any rain, allowance should be made for he milk that the roughage will proluce after maintenance has been proided for. Roughage furnishes the ulk that cows require, is cheaper feed han concentrates, and is usually rown on the farm. Cows should herefore have all the roughage they will consume. On roughage alone a ow should receive maintenance and in addition nutrients sufficient to allow ier to produce a certain quantity of nilk. The quantity of milk that she nay produce will depend upon the naure and quality of the roughage and he amount consumed as well as the uality of the milk produced. An avrage sized cow may consume enough illage and alfalfa to produce as much as 24 pounds of milk testing 3.5 per cent to 4 per cent, or 20 pounds of milk testing 4.5 per cent to 5 per cent. As soon as the nutrients in the milk produced exceed the nutrients provided in the roughage, grain should be added to the ration and in proportion to the quantity of milk produced. In case the roughage consists entirely of alfalfa or clover hay it may economize the ration if enough of a suitable concentrate is added to balance the roughage before feeding a grain mixture. Corn and cob meal or dried beet pulp are desirable concentrates to use for this purpose. Clover and alfalfa, besides being palatable roughages, are among the cheapest sources of protein and one or the other should form the basis of the ration for a dairy cow.

Comment by Farmer Putnam

Continued from Page 9

all kinds of garden truck. Even tomatoes got ripe.

After we got thru eatin' baked potatoes Pref. Kezer was called on to make a speech. The wind was blowin' a gale right offen the mountains, and the big tent was swayin' and floppin' in the breeze, but Kezer got it kind-a calmed down before he quit. It took some lung power to talk ag'in that wind, but them professors up to Fort Collins seems equill to most anything.

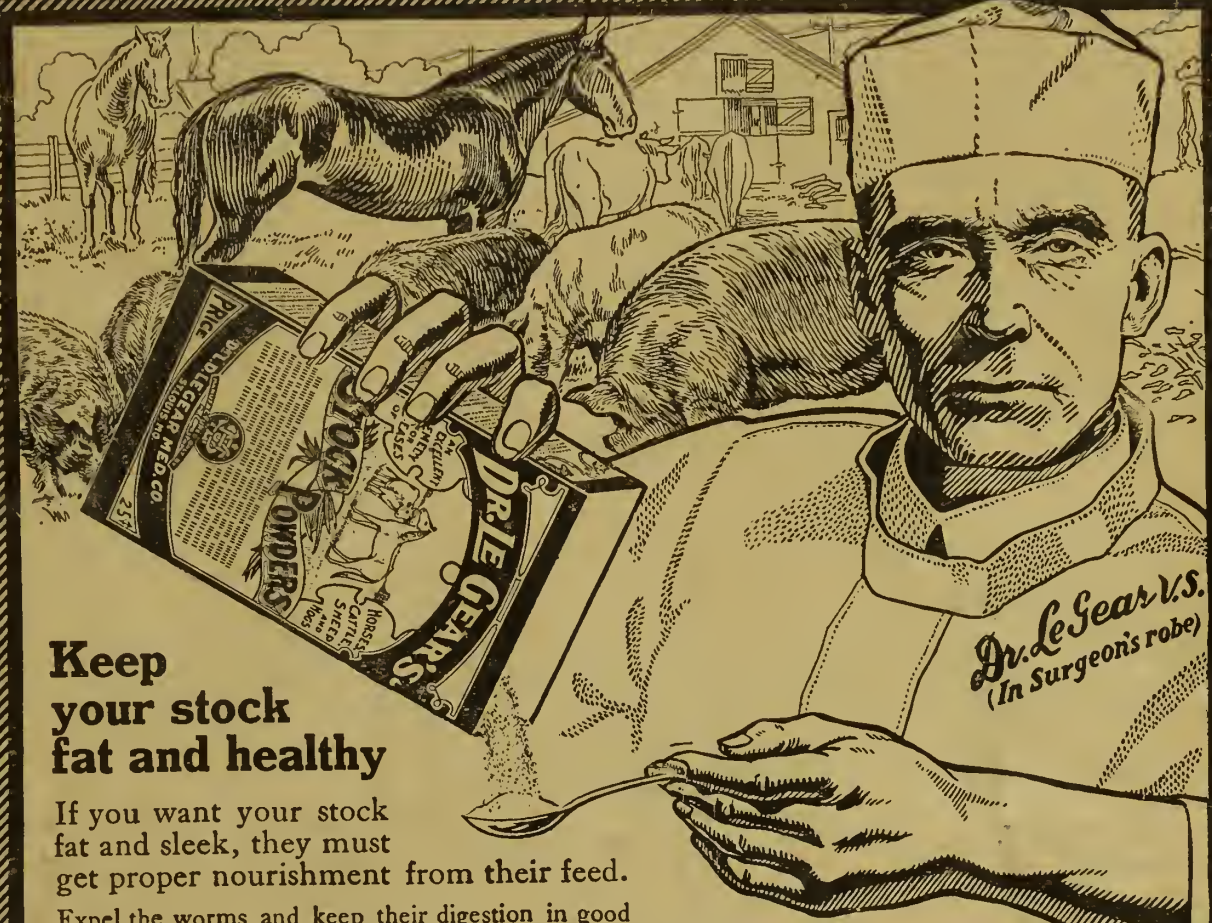
Then they called on Prof. Sandsten to give 'em a potato talk in the schoolhouse, which he done so. I wanted to report the talk but the editor sez he thinks too much of Prof. Sandsten to have me to try to give our readers a account of his talk.

"Jeff," he sez, "If this paper was to print what you wrote about a technical lecture of one of them experts like Sandsten we'd lose every potato grower we got on our list. I'm goin' to write that part of it myself for the next issue and leave you to handle the foolishness."

I reckon that's the editor's way of lookin' at it, but it's dollars to doughnuts that more people would read it if I wrote what Sandsten said.

THOMAS JEFFERSON PUTNAM.

The Ontario province of Canada contemplates the purchase of a tractor for every county in the province. It is now estimated that the Canadian yield of wheat this season will approximate 42,000,000 bushels. Sixty-three per cent of her winter crop was abandoned.



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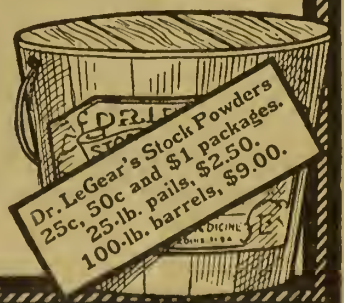

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The Farm Home

MRS. H. T. FRENCH

Questions about home problems promptly answered by letter and thru the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

Compensation

I have walked in the woods today,
And marked how the soft moss clings,
With a tender touch that glorified,
To the scarred and the ugly things;
The trunk that has lived and blessed,
Now fallen to long decay;
The tree that the wanton axe has bruised,
And spoiled of its blossoming day;
Lichen and moss and fern,
Seeking with loving pride,
Under the spell of their magic touch,
The wounds of years to hide.
So does the love of God
Heal with a touch divine,
Adding a grace for the joy denied—
The griefs of your life and mine.

—P. B. Bowman.

"If some old and austere Pilgrim came to earth awhile and stayed, would he growl 'cause modern victuals are not like his mother made?" In our efforts to be patriotic are we not daily reminded of the good old Pilgrim mothers who strove to keep alive the spark of bravery in the hearts of the Pilgrim fathers when economy marked the recipes that have been handed down from generation to generation and are finding a place in our cookery today? Our readers will be interested in a few of these recipes. Pasted in my cook book I find the following which I copy in the old style as given me: "Take of sweet milk one cuppe; and of goode flour one cuppe also. Of grounde Indian meel you will need one-half cuppe, and one egg must be well beaten and added to the whole at the last moment. One spoonful of cream of tarter with two of soda, a speck of salt and a small spoonful of butter or drippings. Beet well and bake quickly." This recipe made what was called Indian breakfast cakes.

Who ever thot of using corn meal in a sponge cake? Well, this recipe was and is a great favorite in some New England homes: "With two cups of cornmeal mix one-half cup of flour; add a half cup of molasses, two cups of milk which is sour, two teaspoons of saleratus and a little salt." This was spoken of as a sweet cake for "everyday" use.

Brown bread, which is served every Saturday night for supper with hot baked beans (not in a casserole but on a large platter) is made as follows: One cup cornmeal, one cup rye flour, one cup graham flour, one teaspoon salt, one teaspoon soda, one pint milk (sour), one-half cup molasses. Place mixture in a tin pail or can tightly covered, allowing plenty of room for rising, and the pail placed in a large iron kettle in which water is kept boiling for four hours.

Just as good today as in the "good olde days" and made in much less time and labor with the use of improved cooking devices, such as the pressure cooker, aluminum steamer, double boilers and fireless cookers.

Eat More Fish

The above heading attracts our eye as we look over the publications sent out by the Food Administration from Washington, D. C., and as I review my recipes for using fish I find this little story. "John Alden once told a prince that one reason why he fell in love with Priscilla was because he had tasted a clam chowder she made. And John further stated that nobody in the world could make a clam chowder quite so well as the women who are descended from the maid who coaxed John to "speak for himself." Following is the famous recipe:

Take some small slices of salt pork; fry them crisp in the bottom of a large iron kettle or Scotch bowl; remove the slices and slice two or three onions into the fat and let them cook until soft, stirring often to prevent sticking; then pour in nearly as much hot water as you desire to have chowder and into this water turn the potatoes which you have previously pared and sliced. When the potatoes are soft, add one-half pint can of minced clams (if you cannot have fresh clams) and boil for a few minutes. Just before serving add a pint of sweet milk and a piece of butter the size of a walnut, and salt and pepper to taste.

Note—For advice, information and recipes concerning the preparation of fish that we may aid in this conservation movement, write at once to the Department of Commerce, United States Bureau of Fisheries, Division F. Washington, D. C.

Our Family Garden

The family garden is by no means to be despised. The editor has realized more than ever this summer what a decided help it is, as a result of such work as shown in the accompanying picture. This one family can boast of some two dozen varieties of vegetables in storage, three hundred or more jars of canned, preserved, pickled and dried fruits and vegetables in the cellar, a little bank account started for four children, as a result of sales and prizes received for home garden exhibits. With plenty of good vegetables and fruit the mind is somewhat relieved as we plan for a wholesome family table and the combination will surely go a long way toward solving the problem of H. C. of L. and food conservation. In addition to these facts, the wholesome exercise and occupation for these young people has meant much and the editor hopes to build the worth while things of home life on these small beginnings.

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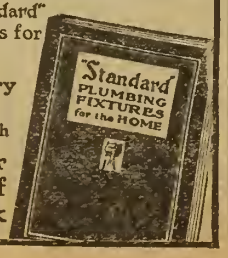

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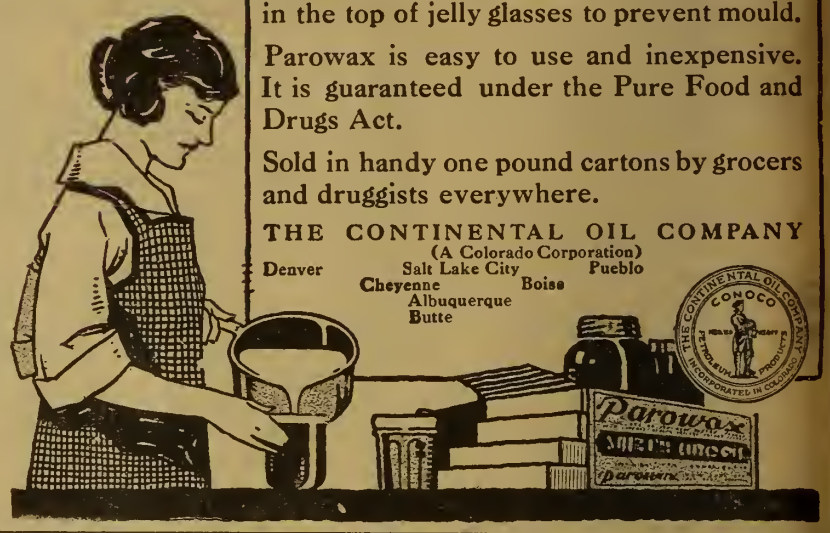

PATTERN DEPARTMENT

All Patterns 15c each. Address WESTERN FARM LIFE Pattern Department, 14th and Arapahoe, Denver, Colo.

2001—Smart Style for Home Wear. Cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Requires 6⅜ yards 36-inch material for 36-inch size. Gray and white striped seersucker is here shown. The waist has gathered fullness beneath a square yoke, which may be omitted.

2185—Good Coat for General Wear. Cut in sizes 34, 36, 38, 40 and 42 inches bust measure. Requires 6½ yards 54-inch material for size 38. This model is good for pile fabrics, zibeline, corduroy, velour, wool mixtures, double faced cloth, also for silk and velvet. The sleeve is in raglan style and made with one seam.

2176—Simple Dress for School and Home Wear. Cut in sizes 8, 10, 12 and 14 years. Requires 3½ yards for the dress and 1¾ yards 27-inch material for the guimpe for 10-year size. This style is good for gingham, serge, cashmere, lawn, voile, batiste, organdy, repp, poplin, silk or percale. The guimpe may be of the same material as the dress, or of contrasting goods.

2171—Dainty Little Party Dress. Cut in sizes 6, 8, 10, 12 and 14 years. Requires 3½ yards 44-inch material for 10-year size. This model is lovely for soft crepe, silk, gingham, organdy, challie, batiste, voile and lawn. The waist is finished in shaped outline, below the waistline. The sleeve may be in wrist or elbow length.

Smart Dress. Waist 2182; Skirt 2181— Waist is cut in sizes 34, 36, 38, 40, 42 and 44 inches bust measure. The skirt in sizes 22, 24, 26, 28, 30 and 32 inches waist measure. Requires 6 yards 36-inch material for the entire dress in size 36. Figured shantung, in tan and green, is here combined with Georgette crepe in a contrasting shade. The sleeve is new and novel. The collar and pocket are also new in their shaping. This illustration calls for two patterns at 15c each.

2173—Dress for Misses and Small Women. Cut in sizes 16, 18 and 20 years. Requires 4⅞ yards of 44-inch material. This is a very attractive style, good for linen, silk, lawn, gabardine, shantung, serge and Jersey cloth. The skirt and waist are joined at raised waistline. The sleeve is new and novel.

2190—Ladies' One-Piece Corset Cover. Cut in sizes 32, 34, 36, 38, 40 and 42 inches bust measure. Requires 1⅜ yards 36-inch material for medium size. Suitable for "all over" embroidery, for lawn, batiste, cambric, nainsook, crepe or silk. Any desired trimming may be used. The design is very simple and easy to make.

2186—New Things for the Baby. Consisting of Cap, Sack, Night Gown and Dress. For the dress of flouncing, it will require 1¾ yard of 36-inch material with 1¼ yard of plain material for yoke and sleeves. Of nainsook or lawn 36 inches wide it will require 2¼ yards. The gown will require 2½ yards of 24 or 27-inch material. The cap, ½ yard of 18-inch material. The sack requires ⅞ yard of 27-inch material.

CATALOG NOTICE

Send 10c in silver or stamps for our Up-to-Date Fall and Winter Catalog, containing 550 designs of Ladies', Misses' and Childrens' Patterns, a Concise and Comprehensive Article on Dressmaking, also some points for the needle (illustrating 30 of the various simple stitches), all valuable hints to the home dressmaker.

Profitable Farm Poultry

W. E. VAPLON

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries Poultry Department, Western Farm Life, Denver, Colorado.

Hens Molting Early

Ve have a fine flock of Rhode Island Reds. y are molting very profusely now and have n for nearly a month. Is not this very unal? Do you think that hens molting this early ld make or be good winter layers? How and t would you feed them while molting?—. M., Breen, Colo.

t may be that the late, cold spring pring hens laying late into the sumr rather heavily and then the long, dry spell following have caused re profuse molting than usual at this time of year. In our own flock we find no difference and are not alarmed at the rate of molting going on. Hens are laying very well for this time of year, even in the molt. Should you want to dispose of the poorest of your hens, get rid of those that have quit laying and are molting the heaviest. Any molting hen laying should be kept over, especially the younger ones. It is not likely that any of your hens will be good early winter layers. You must depend upon pullets for eggs up until January or February, when the hens get back to business. You will find some laying fairly well thru the molt and apparently never ceasing, but generally the molt will break up the laying and the hens will be idle until the mid-winter or later. As for feed, we would continue just as we have been feeding. Free range is advisable, of course, for health and vigor, but if hens are confined, feed them as large a variety of stuff as you can, especially of green stuff. If milk can be procured, they have a good substitute for the bugs and worms they would get on the range. I see no advantage in changing the feed because of molting and find that under all conditions a variety of grains, with green stuff, milk or meat, and exercise if possible, is all that is needed for the health and vigor and good laying. Now is the time to cut out the poor hens. Just as soon as they are thru laying for the season, dispose of them.

Poults Have Weak Feet

I raise a good many turkeys and now have two that seem to be in perfect health but can't stand up. They are about two months old, eat good, dress their feathers and seem well, but can't stand; their feet seem useless. Please tell me a remedy if you can. I have a flock of 40. I have the ailing ones by themselves. — Mrs. H. C., Fowler, Colo.

Under the most favorable conditions we have had more or less cases each year of what we speak of as leg weakness in poultry. This year we had but one case, in a cockerel weighing four pounds, but he recovered in a few days and is now as well as ever. We used to be very much alarmed about such cases, but have never lost any by death and can only guess as to what might be the cause. Many reasons are given, some holding that the trouble is caused by too rapid growth or over-feeding, and others that fowls, like people, are afflicted with rheumatism and attribute that as being the cause. We would suggest that you pen up the afflicted poults, giving them plenty of soft material such as straw or hay, and do not over-feed. I think you will find that if they are free of lice and eat well they will recover in a very short time. Be sure to look on their bodies for lice and see that the coop in which they are kept is free of mites.

Mysterious Chick Disease

I have a peculiar disease among my baby chix. Head is swollen, have sores all over body, head and comb scabby. They also go blind. Can't recover. Have been killing most of them when I found them sick. Can you advise me?—C. M., Simla, Colo.

It is impossible to tell you from the description you give what is troubling your baby chicks. It may be chicken-pox, but the chances are that it is a disease of the feet and face which is quite common in the plains section of Colorado. We have just returned from a trip to Morgan and Weld counties where we found this trouble very prevalent—some entire flocks of two and three hundred being lost by a disease of the feet and face which is somewhat similar to the description you give of the trouble you are having. No remedy for this is as yet known, altho the Veterinary Department of the State Agricultural College is now investigating this disease and hope to determine the cause and find a remedy. We would suggest that you place all your baby chicks on plowed ground, keeping them from the sod if they have the run of the prairie sod, after carefully anointing the face and scabby places with vaseline, and keeping these places softened by anointing with vaseline every few days. Should the trouble continue, please send three or four badly affected chicks to the Veterinary Department of the State Agricultural College for examination. Please write them beforehand, asking how and when to ship.

Young Turkeys Dying

Will you please send us some information about raising turkeys? We hatched 28 out of thirty eggs. Some the magpies took, some we think were drowned in the irrigating ditch, and some have just drooped and died for no apparent reason. We could find no lice. At latest counting there were only six left. Can you please tell us what was the matter and the remedy?—Mrs. A. G. P., Paonia, Colo.

It is impossible to tell from your description what is killing your poults. One would need to know the conditions under which they are kept, whether with a turkey mother or hen, whether they have free range, what is fed them, and the conditions generally surrounding them, and also something of the care given them. Turkeys should have free range, but the mother should not be permitted to travel with them until they are some size, as they are very likely to wander too far and tire out the young ones. They should have a variety of grain, and of course should be kept free of lice and mites. Even tho you find no body lice, it might be well to look in their roosting quarters very carefully for the mites which hide there during the day. A thoro saturation of these coops would do no harm and it would probably do a great deal of good. Any coal-tar preparation would be good for this purpose. Young poults should not be allowed to wander in the wet grass or grain. They should be confined until the range is dry. You did not mention whether the heads were swollen, which might be the case if they had roup; whether or not the bowels are in bad shape, and it is impossible to tell you what the trouble is without knowing about such conditions as we mentioned before.

Good Business Training Pays

Successful ranch men are business men. They study the markets; they keep records showing losses and gains. They give their sons and daughters the same practical training that the merchant gives to his son or daughter.

For several years the Barnes School has made a special study of a course adapted to this need—a course intensive, practical and at the same time providing a valuable general training.

To young people and parents who would like to investigate we are glad to mail our forty-eight page catalog. New students may start at any time.

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PULLFORD TRACTOR, $135

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Pullford pulling two 14-in. plows. The "Pullford" does the work of four big horses on high gear, attached to practically any make of car in 80 minutes; removed in less time. The "Pullford" will do all your farm work, such as plowing, harrowing, seeding harvesting, etc. Will also do your heavy hauling. No farm should be without one. Live agents wanted in every county in Colorado, Wyoming, New Mexico, Texas, Oklahoma.

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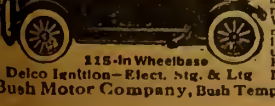
rive and demonstrate the Bush Car. Pay for it out of our commissions on sales. My agents are making money. Shipments are prompt. Bush Cars guaranteed or money back. 1918 models ready. Write at once for my 48-page catalog and all particulars. Address J. H. Bush, Pres. Dept. 11-R1



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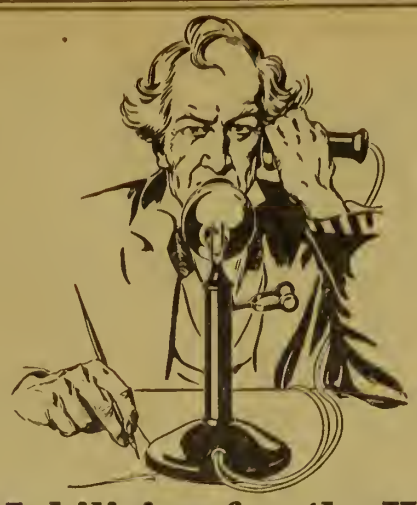

Mobilizing for the War

Your Uncle Sam is getting ready to fight.

All-over the country, hundreds of thousands of artisans are busy with war preparations. Great warships are sliding off the ways; navy yards and arsenals are working night and day; great mobilization camps are springing up as if by magic; everywhere the vast resources of the Nation are being gathered together for war.

All over the Bell telephone system, thousands of employees are busily engaged in all branches of telephone activity to keep pace with the extraordinary telephone needs of the Nation. Everywhere poles are being set and wires strung, central office equipment increased, new long distance lines constructed between important points and telephone facilities increased.

The greater and more varied the Government's war activities become, the greater will be the demands upon the Bell system for service. With the increased Government requirements, there will be greater demands for commercial service.

The scarcity of material and labor have set definite limits to the amount of new construction, and the needs of the individual must be subordinated to those of the Nation.

It is going to be harder to supply new telephones, extension telephones and to out up wire to new telephone stations, because of the vast amount of telephone equipment devoted to the service of the Government, and because the Bell organization has contributed heavily to the draft, and many of our technically trained men have voluntarily joined the colors.

When you use the telephone, we ask you to remember the patriotic service we are rendering the Government, the extraordinary conditions we are facing, and to help us maintain good service by a conservative use of your telephone and equipment.

Mountain States Telephone and Telegraph Company

Produce Eggs at 17¢ a Doz.

The U. S. Dept. of Agriculture at the Experimental Farm, Beltsville, Md., during the past year has proven conclusively that if you make your hens LAY instead of allowing them to LOAF you should be able to produce eggs at a food cost of about 16¾c per dozen, even at present feed prices—AND YOU CAN MAKE THEM LAY.

You may not do quite as well as the Government's experts but you can come mighty close to it by mixing

Pratts Poultry Regulator

daily with a good egg-making ration, at a cost of one cent a month per hen. Do this and we guarantee your flock will produce the extra eggs that bring the big profits.

Pratts Poultry Regulator is a *concentrated tonic and conditioner*—not a food. It makes the ration *more effective, therefore cheaper.* It strengthens and tones up the entire system in a natural way—sharpens the appetite and improves digestion—enriches the blood—regulates the bowels—insures perfect health—makes the egg-producing organs do full duty—brings a profitable egg-yield.

Our dealer in your town has instructions to supply you with Pratts Preparations under our square-deal guarantee—*"Your money back if YOU are not satisfied"*—the guarantee that has stood for nearly 50 years.

266 *Write for 48 page book—Pratts Practical Pointers on the Care of Poultry.*

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Here's your opportunity to get the wonderful new Aladdin Kerosene Mantle light FREE. Write quick for particulars. This great free offer will be withdrawn as soon as some distributor starts work in your neighborhood. You only need show the Aladdin to a few friends and neighbors; they will want one. We give you yours free for this help. Takes very little time, and no investment. Costs nothing to try it.

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common kerosene (coal oil), no odor, smoke or noise, simple, no pumping up, no pressure, won't explode. Tests by U. S. Government and thirty-five leading universities show the Aladdin gives three times as much light as best round wick flame lamps. Was Gold Medal at Panama Exposition. Over three million people already enjoying this powerful, white, steady light, nearest to sunlight. Guaranteed. And think of it—you can get it without paying out a cent. All charges prepaid. Ask for our 10-day Free Trial Offer and learn how to get one Free. AGENTS WANTED

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Largest Kerosene (Coal Oil) Mantle Lamp House in the World

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Mr. Farmer, you can get this brand new $298.00 CURTIS FORM-A-TRACTOR and a new Ford Touring Car, freight prepaid, as a reward for a few weeks' spare time work in your own community. The Curtis Form-a-Tractor will enable you to farm scientifically, and if you already have an auto I'll give you this Tractor and $360 in cash. Do your bit. Help feed the allies! Earn this Tractor and Ford Auto by my easy plan. Write me today and I'll promptly tell you how. H. D. BRATTER, Dept. 47, Omaha, Neb.

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Fur prices are high this year. Coon, Opossum, Mink, Skunk, Muskrat, Wolf and all other kinds are wanted. Trap and ship to us. We pay most—and in cash.

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Tells how to trap and prepare skins for highest prices; describes latest traps, including new SMOKE TORPEDO. Shows animals in colors, and supply catalog. FREE—WRITE TODAY.

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FURS WANTED

GET the top price for furs. Trapping pays big if you sell your furs right. Lawrence Prentice of Michigan, made $42.13 extra money in one month by trapping in spare time and shipping the fur to "Biggs at Kansas City." Herman Johnson's trapping last season brought him in $731.58. Emil Peterson of Minn., bought 75c worth of Biggs Baits, and we paid him $70.45 for the furs he caught.

Send for Price List at Once

Send for Price List and free subscription to our monthly magazine "The Trappers' Exchange" — greatest trappers' magazine published. Traps, Guns, Ammunition, etc., sold at factory cost. Biggs baits are guaranteed to increase your catch or money back. Write today.

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Ship to Biggs

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Write today and get a price list on Raw Furs that you can depend upon.

Get Brown's Prices

We pay what we quote with a liberal grading.

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BE WISE

Get MORE cash for your furs by shipping to Hill Bros. Fur Co.—"The Fastest Growing Fur House in America".

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Weil Pays More Cash for FURS AND HIDES, Remits quicker than any other House. FREE FREE-FREE-OUR TRAPPERS GUIDE is as different from other Guides as Aeroplanes are different from Stage Coaches. Write for PRICE LIST. Big money for Beef Hides. No. 1 cured Hides, 23-24c a pound. Large Horse hides, $7 each; cured, No. 1 Calf skins, 30c a pound. Half a Century in Business. Ask your Banker about Us! WEIL BROS. & CO., the Old Square Deal House. Box 132 FT. WAYNE, IND., U. S. A.

WE BUY FURS AND HIDES

of all kinds and pay top prices and make quick cash returns. TRAPPERS GUIDE sent free to all who ship and mention this ad.

McMILLAN FUR & WOOL CO.
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WRITE FOR CIRCULARS.

FURS TAKE-A-TIP

Sell direct. Cut out all Middlemen. Ship to us.

We need and want your furs to supply our trade. Write today for highest and best price list ever published. It's free to Trappers.

Polar Trading & Tanning Co., Dept. 30, Omaha, Neb.

County Agent's Usefulness

Just how a county agriculturist can make himself useful is shown by the report of E. J. Leonard, secretary of the Morgan County Farm Bureau, in reviewing the work of Mr. McCord for the year 1916. The following is quoted from this report:

"With proper care and seed adapted to this elevation yields (of corn) from 30 to 50 bushels per acre are often reported. There were 146 farmers who followed the suggestion of our county agriculturist and tested the germination of seed before planting. Good stands on 3,000 acres of corn resulted. Others next season will profit by doing likewise. More thot and care in selecting seed of all kinds means better crops for the future. * * * Following a well planned campaign of last year's executive committee, the agriculturist did some valuable work in smut control. A year ago nearly all the wheat threshed in the county was more or less affected by smut. For over half the crop marketed the price was reduced 10 to 50 cents per hundred. The agriculturist got very busy before seeding for fall grain began and advised everyone to treat the seed before planting. He wrote articles for all the newspapers and wrote cards over the county telling about smut, how to treat the seed, and gave several demonstrations showing how it was done. His advice was generally followed and in practically all fields where the seed was thus treated there was no smut, while it was present as before in other fields. In an actual record of 3,765 acres of wheat so treated in Morgan county, it is estimated that the average yield was increased at least 5 bushels per acre, besides having the entire crop in condition for top prices. At current prices this means $6.25 per acre, or a total of more than $23,000 saved the wheat growers this year, because they followed the advice and suggestions of the man we have in the field * * * This one piece of work pays the county many times the cost of the field man and justifies the continuance of the work."

Manure Is Worth $4.76 a Ton

Manure is worth $4.76 a ton, and it should be stored during the growing season to prevent leaching.

The price per ton of the manure has been determined from experimental data upon fertility plats. In the experiments alfalfa has been grown continuously since 1910, having an application of five tons of manure annually as a top dressing. The value of the manure is based on the increase secured in 1916 and value of the hay at only $8 a ton. It is the common practice among farmers to leave the manure heap exposed to the rain, which washes out the plant food, or to pile it in a creek to be washed away from the farm. This is bad practice, as the manure is needed on the farm to maintain the soil fertility. The estimated value of manure produced on farms in Kansas each year from cattle, horses, sheep, and hogs is $91,587,370. One-third of its value is wasted by improper handling.

Manure should be spread as soon as produced, but in summer while crops are growing this is impossible. The best way to care for manure then is to construct a water tight concrete or wooden bin. It should be large enough to hold the manure produced in summer. In the fall the manure can be spread, having decreased less in value than it would have under ordinary conditions.—R. I. Throckmorton, Kansas State Agricultural College.

Seven-Foot Corn Grown at Seven Thousand Feet

Continued from Page 4

foothill and mountain conditions—gets ample moisture. There seems to be no question about the drouth-resistant qualities of the acclimated varieties, but the problem is to get the corn ripe between killing frosts. No grain sorghum yet tried under these conditions has met the test but Sudan grass, a forage sorghum, because of its quick habit of growth, has "fooled the doctors" and insisted on making a good hay crop at altitudes as high as 6,500 feet in central Colorado, with some show of making seed at 6,000 feet farther south in the state.

These things are encouraging and they are not experiment station news, but facts picked up on the farms, where there are no artificial conditions. If the Cliff Dwellers could grow corn on the Mesa Verde a thousand years ago, I guess the American farmer can do it today in a correspondingly short season in the high mountain valleys and the upper reaches of the plains, beyond the grain sorghum line.

In the country of cool nights and bright warm days dwarf corn stands up better than any of the kafir group. It does not shy at frost as do the kafirs, tho the kafirs are better drouth resisters.—A. T. S.

Manchurian Beans Coming

The following statement comes from the United States Food Administration:

"The bean harvest this year is estimated by the Department of Agriculture at approximately 7,000,000 bushels in excess of last year, or nearly double last year, and promises an abundant supply. The growers' associations in prominent bean-producing states are holding beans for from 13½ to 15 cents per pound as against an average price realized by the grower last year of 8 cents per pound. There has been 100 per cent increase in the Manchurian bean crop, and it is now estimated at 2,000,000 tons. Owing to shipping shortage, practically the only outlet is to the United States, and these beans will flow into the American market from December on much below the prices now being demanded for American beans."

A Lamp Without a Wick

The Sunshine Safety Lamp Co., 322 Factory Bldg., Kansas City, Mo., has a new portable gasoline lamp which gives the most powerful home light in the world—a blessing to every home not equipped with gas or electricity. 300 Candle Power at one cent per night. This remarkable lamp has no wick and no chimney, is absolutely safe and gives such universal satisfaction they are sending it on Free Trial. They want one person in each locality to whom they can refer new customers. Take advantage of their free trial offer. Agents wanted. Write them today.—Adv.

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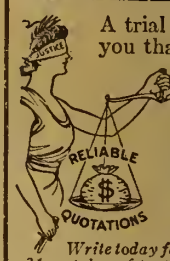

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Write today for our latest price list and Trappers' Guide. A 50c bottle of Friend's Animal Decoy will increase your catch.

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Highest prices paid—prompt returns, correct grading—45 years of fair dealing means more money for you. Before shipping any one get our reliable prices, supply catalog and shipping tags.

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Farmers' and Stockmen's Exchange

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted

60 ACRES, 3 MILES OF DEMING, N. M., FOR sale cheap. Write for particulars. Richard Lodyfield, Deming, N. M.

WANTED—TO HEAR FROM OWNER OF GOOD ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minn.

FOR SALE—160 ACRES GOOD LAND, FOUR miles from Haswell. Also house and lot in Haswell. $3,500 takes both. Minnie S. Boone, Pagosa Springs, Colo.

IRRIGATED FARM FOR SALE—225 ACRES, five miles from Denver Stockyards, one mile from railroad station. First-class water right; excellent improvements; liberal terms. J. D. Pitch, 525 Cooper bldg., Denver.

0 ACRES IRRIGATED LAND, 3 MILES FORT Morgan; 65 acres in cultivation, new fence, under Bijou ditch. Price $5,000. Will sell for cash, payments or trade for Denver city property. E. T. Sloan, Hotel Tours, Denver.

DO YOU DESIRE A HOME? OR DO YOU want to sell or trade the one you already have? We are in a position to assist you either way. We will find you a customer who will buy your real estate, or we can find you a home for cash or easy payments anywhere you choose. Let us hear from you at once. Perry & Son, Weldona, Colo.

4,000 ACRES, ALL UNDER IRRIGATION. Cuts 2,000 tons of hay, good ranch improvements, price $25 per acre; 10,000 acres of cased land adjoining.

15,000 acres, about 2,000 under irrigation, good ranch buildings, $12.50 per acre.

4,000 acres, good foothill ranch, lots of running water, $10 per acre.

640 acres, good grain section, 2 sets of improvements, $12.50 per acre. Sydney C. Osmer Co., 308 15th St., Denver.

IRRIGATED LAND NEAR DENVER FOR SALE on crop payments, in tracts of 80 acres and upward; 50,000 acres to select from. We are not agents but trustee closing out large trust estate under order of court. Within 10 to 30 miles of Denver and near railway towns having sugar factories, canneries, creameries, alfalfa mills, elevators, etc. Fertile soil, under splendid irrigation system. Terms, one-tenth cash, balance 10 annual payments, interest 6 per cent, first four years purchaser need only pay us two-fifths of crop in lieu of regular payments due those years. Write for literature. Chicago Title & Trust Co., Trustee, 716 Ideal bldg., corner 17th and Champa sts., Denver, Colo.

HAVE SOME CASH BUYERS FOR SALABLE farms. Will deal with owners only. Give full description, location and cash price. James P. White, New Franklin, Mo.

GOVERNMENT LANDS

GOVERNMENT LAND. FREE BOOKLET. JOseph Clark, Sacramento, Cal.

LIVE STOCK

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HORSES

REGISTERED PERCHERON STALLION — Woodrow Wilson No. 100766, 5 years old, weight 1,800 lbs. Broke to work and easy to handle. Colts to show. Besigue Brilliant Coco breeding. Price $750. Geo. Cowing, Box 101, Wibert, Colo.

CATTLE

EXCELSIOR FARM HOLSTEINS—BULLS $60 and up. Cows and heifers for sale. Western Kansas. C. C. Cole, Levant, Kana.

SHIP YOUR LIVE STOCK TO US—COMPEtent men in all departments. Twenty years on the market. Write us about your stock. Registered breeding stock bought on orders. Market information free. Ryan-Robinson Com. Co., 225 Live Stock Exchange, Kansas City, Mo.

HOGS

REGISTERED, BIG TYPE DUROC JERSEY hogs for sale. Edgemoor Farm, Littleton, Colo. Caldwell Martin, Owner.

POULTRY

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

QUALITY DARK CORNISH, THE IDEAL FARM fowl W. W. Officer, Fowler, Colo.

B. O. BUFF ORPINGTONS. STOCK FOR SALE. F. M. Shank, R. No. 2 A, La Junta, Colo., Sta. Vice-Pres. Nat. S. C. Buff Orp. Club.

A FINE LOT OF VIGOROUS, EGG-BRED S. C. W. Leghorn cockerels for sale. They will improve your flock. Rowley Egg Farms Co., Palmyra, Colo

QUALITY DARK CORNISH, AT NEBRASKA State Fair last month, won: 1st and 2nd cockerel, 1st and 2nd pullet, 1st and 2nd young pen and 1st old pen. Have a few choice cockerels to spare at $3.00 and $5.00 each. H. Jandeheur, Alma, Nebraska.

MISCELLANEOUS

EXPERIENCED MAN, WIFE AND GROWN SON want a furnished farm or job on farm. E. M. Heywood, 73 W. Virginia Ave., Denver.

WHITE SWEET CLOVER SEED, REASONABLE. John Lewis (farmer), Madison, Kans.

RAW FURS WANTED—DON'T SHIP YOUR wool, poultry, hides or furs of any kind until you get our price list. Perry Brothers, Weldona, Colo.

KODAKS

KODAKS, CAMERAS, PHOTO SUPPLIES—Fords, the best kodak store, 1029 16th St., opp. old P. O., Denver, Colo., for Eastman Kodaks, all makes cameras, films, photo supplies; develop any size roll films, 10c; print pictures, 3c each and up; mail orders solicited; kodak and camera catalog mailed free upon request. Mention this paper.

LUMBER

LUMBER, POSTS, MILLWORK, WHOLESALE prices. Inspect before paying. Buy now. Prices advance December 1st. Quick, freight prepaid estimates on your carpenter's bill of material. Price lists, catalog free. Keystone Lumber Co., Tacoma, Wash.

PET STOCK

BLUE MERLE AND ENGLISH SHEPHERD pups. Hermann Bruesehoff, Norwood, Minn.

NURSERY STOCK

BUY TREES FOR YOUR ORCHARD OR GROVE and have two and three years to pay at the same time. All stock that fails to grow replaced free. Address Weldon Valley Adv. Co., Weldona, Colo.

TANNING

LET US TAN YOUR HIDE—COW, HORSE OR calf skins for coat or robe. Catalog on request. The Crosby-Frisian Fur Co., Rochester, N. Y.

BEE SUPPLIES AND HONEY

BEE SUPPLIES OF BEST QUALITY. SEND for 68-page illustrated catalog. We also sell Comb and Extracted Honey. The Colorado Honey Producers' Association, Denver.

EXTRACTED HONEY, WHITE, ONE 5-GALLON can $9.50, two $18.00. Harry Sanders, 3516 Clayton, Denver, Colo.

EXTRACTED COLORADO ALFALFA HONEY. Put up in five-gallon 60-pound cans, 12½c per pound. Guaranteed. John J. Van Engen, R. F. D., Crawford, Colo.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24TH, 1912, OF "WESTERN FARM LIFE," PUBLISHED SEMI-MONTHLY AT DENVER, COLO.—FOR OCTOBER 1, 1917.

State of Colorado, County of Denver. Before me, a notary public in and for the state and county aforesaid, personally appeared W. S. Edmiston, who, having been duly sworn according to law, deposes and says that he is the business manager of the Western Farm Life, and that the following is to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor and business manager are:

Name of Publisher—The Farm Life Publishing Co., Denver, Colo.
Editor—A. T. Steinel, Denver, Colo.
Managing Editor—A. T. Steinel, Denver, Colo.
Business Manager—W. S. Edmiston, Denver, Colo.

2. That the owners are:
W. S. Edmiston, Denver, Colo.
F. P. Johnson, Denver, Colo.
E. M. Ammons, Denver, Colo.
J. F. Reardon.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages or other securities, are: None.

W. S. EDMISTON,
Business Manager.

Sworn to and subscribed before me this 25th day of September, 1917.

EDMONTE O. HAFFNER,
Notary Public.
(My commission expires March 14, 1920.)

JACK MEN, LISTEN

I have the largest 6-year-old jack west of the Missouri River for sale. Other bargains in Mammoth jacks and jennets.
Inspection Invited Satisfaction Guaranteed
W. H. WHEELER, Garden City, Kan.

BARGAINS Percherons, Belgians, Shire, Suffolk, Clyde, Hackney, Great Coach Stallions, $450 and up. Good Jacks One, two and three years' time given purchasers.
R. I. LITTLE
Good Block Des Moines, Iowa

BLUE RIBBON HERD
DUROC JERSEY HOGS
Everything Registered
Stock for Sale
C. F. BURKE, Rocky Ford, Colo

Shorthorn and Polled Durham Cattle
Valentine's Last, X12316, 452005 at head of beef herd. Claywood White, 427350 at head of milk type.
STATE INDUSTRIAL SCHOOL
Golden, Colorado

OVER 3,000 PERCHERON SALES

These transfers of sale were made on the Percheron Stud Book alone in the four months ending March 1st, 1917

Does This Mean Anything to You?

It should prove beyond a doubt that farmers everywhere are fast seeing the possible profit in raising better stock and are anxious to secure the seed for a foundation in Pure Bred Sires and Dams.

Big Drafters Command the Highest Prices Ever Known to the Trade

Horses are and always will be as necessary as plows. Get in the game NOW and reap your harvest from good seed.

Write us today your desires. We will be glad to correspond with you.

Our horses won 42 First and 14 Grand Champion prizes in Colorado and Wyoming in 1917 show season just closed.

The Jarosa Ranch
HOWARD M. JAY, Owner
R. F. D. No. 2, Box 71
Longmont, Colo.
Percheron and Belgian Horses
Holstein Cattle

Denver The Live Stock Market

Denver is the Highest Market **Most of the Time** and the Best Market **All the Time** for Western Cattle and Sheep.

Time and again cattle have sold on the Denver market for higher prices than the same cattle would bring same days at the Missouri River.

Why don't you market your cattle and sheep at Denver, where they will bring you greatest net returns?

An Opportunity to Get Some of the Best in the West

We offer for sale our entire Berkshire herd, which has made prominent winnings the last two years at Denver in competition with the most prominent herd of the corn belt, and with Mr. N. H. Gentry, the well-known Berkshire breeder, judging.

State Institutions, as you know, do not have elastic budgets. We are obliged to reduce in livestock and have chosen to do it by reducing the number of breeds we carry. If you want to get into first-class Berkshires, write us for prices.

Animal Husbandry Department
COLORADO AGRICULTURAL COLLEGE
Fort Collins, Colo.

TAYLOR'S POLAND CHINA BOARS FOR SALE

25 of the big type Poland Spring Boars for sale out of my big herd boars Big Equal and Big Peter. Peter weighs 700 lbs. at 18 months and won first at Minnesota and Dakota State Fair last fall, also fourth at Omaha Swine Show where 30 pigs were shown in his class. Am pricing these boars for quick sale from $40 for May farrowed to $75 for March farrowed pigs, crated, F. O. B. Farnam. Can load at Farnam at 10:45 in morning and will arrive at Sterling, Colorado, the same evening, or can ship by way of Holdredge over main line B. & M.

Write me for breeding stock.

Reference: Prey Bros. Commission Co., Denver, Colo.

H. B. TAYLOR, Farnam, Nebr.

HIGH CLASS JERSEYS AND DUROCS

I have a corking good yearling bull, out of a cow that has just qualified for Register of Merit; also a dandy November calf out of a R. M. cow. These are priced right. Can you use one of them?

Also some Duroc boars, March pigs, by a son of Grand Model, and out of a daughter of Model Critic. They are good, and priced at $50 each. Worth more money.

Above calves sired by the great Count Majesty

A. M. McCLENAHAN Greeley, Colorado

Percherons, Belgians, Shires

One of the largest breeding herds in the world. I can spare 75 young registered mares in foal to herd sires weighing 2,300 and 2,400 pounds. Two, three, four and five-year-old stallions, ton and heavier; also yearlings. As a producer of the best specimens with size, substance and soundness, this herd has no superior.

FRED CHANDLER, ROUTE NO. 7, CHARITON, IOWA, JUST EAST OF OMAHA

The Grange

Colorado will have a large delegation at the National Grange meeting in St. Louis November 14th to 24th. The Maple Grove drill team, one of the crack organizations of the country, will participate in the drilling contest. Besides the full membership of the team, the state Grange officers and many individuals and officers of local Granges expect to attend the session, which is to be one of the most important in the history of the Patrons of Husbandry.

The Rock Island has been chosen as the official route. Grangers will get the benefit of the Hot Springs rate of $41.15 for the round trip, good from Denver to Hot Springs, Ark., via St. Louis and Memphis. Tickets are good for six months, with stopover privileges anywhere along the line.

Special tourist sleepers will be provided for the accommodation of the Colorado Grangers and arrangements have been made, also, for special dinner service. Breakfasts will be served at 75 cents and luncheons and dinners at $1.

For the accommodation of members of the Maple Grove drill team who wish to return immediately at the close of the drilling contest, a special car will be provided, leaving St. Louis on the morning of Saturday, November 17, and arriving in Denver on the return at noon Sunday. The Grange special will leave Denver at 8:45 p. m. November 12th and arrive at St. Louis on the morning of the 14th, the opening day. Those desiring reservations should communicate immediately with any of the state officers.

Rural Life, published at Rochester, N. Y., calls attention to the opportunity for the Grange in New York state affairs in a way that is applicable to other states, and is herewith republished:

"The Grange needs a legislative platform representing, not the opinions and selfish schemes of a few shrewd machine politicians within the organization, but voicing the sentiment, the demands and needs of the folks on the farms. This platform should be short, concise, consistent and fair to all classes and should be presented in the legislature by the strongest men in the Grange. This Grange legislative committee should keep posted on every move made in the legislature or by the governor affecting the farmers' interests, report it promptly to the subordinate Granges and line up the membership solidly for or against the proposition. The Grange was formed by the fathers to become the organized defense of the farmers. It has a vast membership and a lot of unused organization machinery. It should now take its place as the one powerful organization representing all those who till the soil and live on the land. If it fail, as it has in times past, it will be compelled to step aside for some other organization that will represent the farmers."

Following is a report of the activities of State Business Agent Scruggs:

Golden Rule Grange No. 181 has just bought five carloads of coal, one car of flour and one car posts. Star Grange 277 and Live Wire 287 have bought three cars of coal each, while Empire Grange No. 148 has bought four cars of coal and Wide Awake 268 has bought five cars.

The state business agent has sold 20 cars of hay for Elk Mountain Grange No. 195 and one car of apples for the Montrose Grange.

Mr. Scruggs has visited Pleasant View Grange No. 164 in their large new hall, where they had an all-day meeting, with good speakers and plenty to eat. He has also visited St. Vrain No. 205 and Genessee No. 219, where he made talks explaining his work.

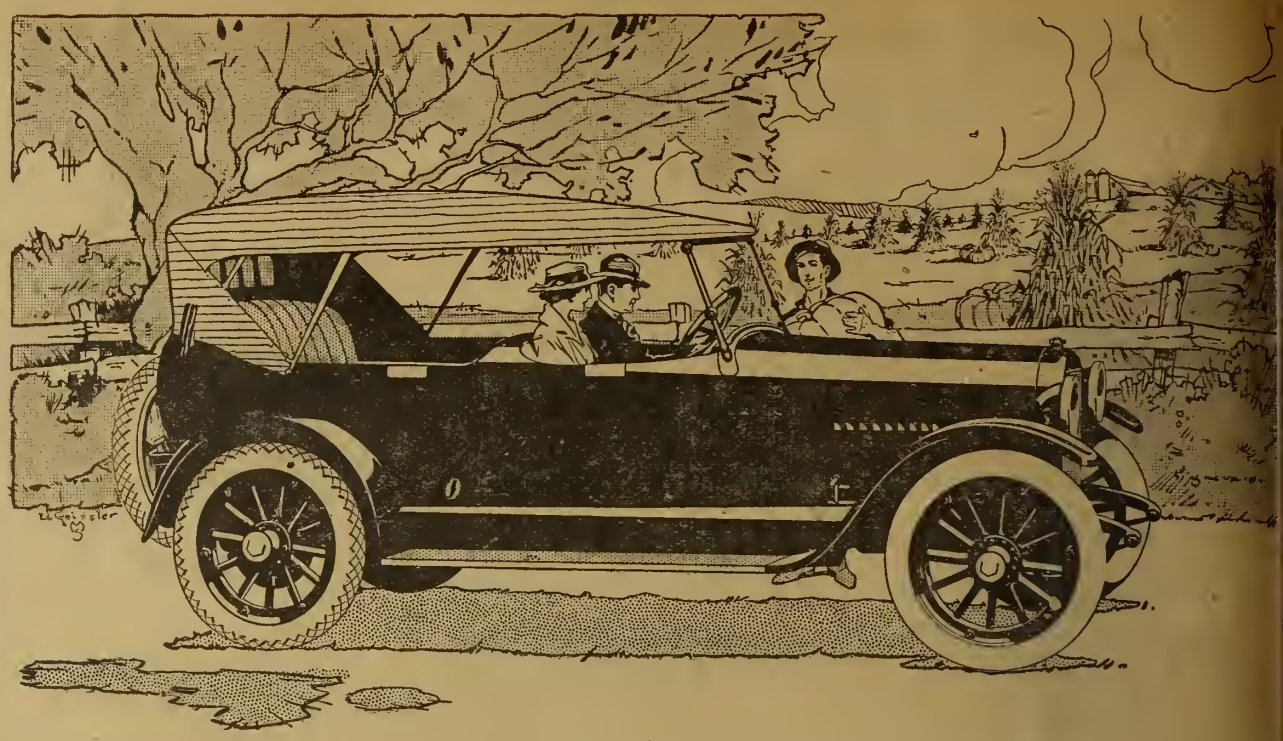
He wishes to announce that the government has established coal prices as follows: Routt county lump, $4 per ton; Maitland coal, $4 per ton; lignite coal, $3.50 per ton. The above prices f. o. b. at mine.

Co-operation Among the Dairy Farmers of Holland

Continued from Page 3

added that valuable bulls that are purchased for thousands of dollars sometimes are bought on the following terms: Since bulls must be recognized and approved at the shows receiving government support, in order to obtain government aid it is a common practice to buy bulls for a certain sum of money payable on delivery (sometimes two-thirds of the total), and an additional sum payable in conformity with the recognition the bull receives in the show ring. A further sum may be paid to the seller by the association if the bull gets over a certain per cent of the cows he serves with calf, or in case he is exhibited for the first time with offspring, if he receives a premium of not less than a certain rank. As it may take two years before some of the terms can be decided upon, the buyer is naturally responsible and liable to the seller for the treatment the animal receives up to that time. The seller must furnish a guaranteed pedigree, a health certificate, including tests for tuberculosis, and also a guarantee that the animal has breeding power.

The fact that the greater part of the purchase money depends upon conditions as stated above shows how the people value and are willing to pay for those qualities in the bull that cannot be judged from his outward appearance, but which largely determine his value as a herd improver.



PAIGE

The Most Beautiful Car in America

The True Meaning of Economy

Webster defines Economy as the "wise, careful administration of our affairs." Please note that word, **wise.** Also note that there is no reference to cheapness or frugality.

In this definition, you will find the proof that Webster was not merely a master of the English language, but a philosopher as well.

The cheap expenditures are never the wise ones. The near-wool clothing, the "marked down" shoes and the cut price harvesting machinery cost less to be sure—**in the beginning.**

But cheap clothing shrinks to boy's size in the first spring shower. The cheap shoes "wear out" after a few months of service and the cheap harvesting machinery fails you at the critical moments. So—in the long run—your cheap purchases become shockingly expensive.

And so it is with a motor car.

There are many cars that sell for less money than the Paige. We could readily build them ourselves if we considered that policy the best one. But we don't.

We firmly believe that Self-Respect, Comfort and Enduring Satisfaction have an actual market value. So we build those things into our product.

We take just a little more time—just a little more care in selecting materials—just a little more pride in our work. And the result is a **real** motor car—not a makeshift or compromise.

Unless we are greatly mistaken, the Paige "Six-39" is just the kind of car that **you** want. It costs $1330 and it is worth every penny of the price.

If you are truly Economical—truly wise and careful—it will be the car of your choice.

Essex "Six-55" 7-passenger $1775; Brooklands 4-passenger $1795; Linwood "Six-39" 5-passenger $1330; Glendale "Six-39" Chummy Roadster $1330; Dartmoor "Six-39" 2 or 3-passenger $1330. All Prices f. o. b. Detroit. No handsomer line of enclosed vehicles can be found on the market.

PAIGE-DETROIT MOTOR CAR COMPANY

234 McKinstry Avenue, Detroit, Michigan

Western Farm Life

GROWN BY A COLORADO POTATO CLUB BOY

Prof. E. P. Sandsten, Colorado potato expert, picked these potatoes from an exhibit of the Elton Boys' Club at the Monument potato-bake as being true to type of the Rural variety and excellent size for baking. The spuds were photographed actual size. See article page 4.

Denver, Colorado
Nov. 15, 1917

THE BEST LINIMENT
OR PAIN KILLER FOR THE HUMAN BODY
Gombault's
Caustic Balsam
IT HAS NO EQUAL

For the Human Body — It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Felons, Boils, Corns and Bunions. CAUSTIC BALSAM has no equal as a Liniment.

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

A Perfectly Safe and Reliable Remedy for Sore Throat, Chest Cold, Backache, Neuralgia, Sprains, Strains, Lumbago, Sore Lungs, Rheumatism and all Stiff Joints

REMOVES THE SORENESS--STRENGTHENS MUSCLES

Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than $120.00 paid in doctor's bills." OTTO A. BEYER.

Price $1.50 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet R.

The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

3,000,000 sold last year

Because they wear well; no hitch on shoulders, no pull on buttons—and *guaranteed*. If yours are not satisfactory—in every particular—mail them to *us*. We will repair, replace, or (if requested) refund your money. Buy a pair—any dealer *anywhere*. They're 50c. The highest possible suspender quality *at any price*.

President Suspender Company
SHIRLEY, MASS.

for comfort President Suspenders

IWAN POST & WELL AUGER

has sharp blades of the best steel. Fastest of all augers. For post holes and wells. Sizes 3 to 16 inches; 8 inch $2.25, freight extra.

Write for booklet about Iwan post hole diggers, sickle edge hay knives ($1.75 prepaid P.P. if dealer will not sell you), ditching spades, drain cleaners, tile hooks, chimney tops, etc.

IWAN BROS.
Dept. B, South Bend, Ind.

Show this advertisement to your dealer — With Straight Edge

Genuine Iwan Augers wholesaled by: Moore Hdw. & Iron Co., Denver; Holmes Hdw. Co., Pueblo, Col.

SELF-OILING WINDMILL
With INCLOSED MOTOR
Keeping OUT DUST and RAIN — Keeping IN OIL

SPLASH OILING SYSTEM

Constantly Flooding Every Bearing With Oil, Makes It Pump In The Lightest Breeze And Prevents Wear

OIL SUPPLY REPLENISHED ONLY ONCE A YEAR

DOUBLE GEARS — Each Carrying Half the Load
Every feature desirable in a windmill in the
AUTO-OILED AERMOTOR
Gasoline Engines — Pumps — Tanks
Water Supply Goods — Steel Frame Saws
WRITE AERMOTOR CO. 2500 12TH ST., CHICAGO

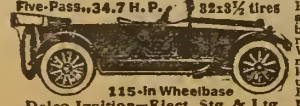
Steel Wheels and Trucks At Very Low Prices

Our Steel Wheels fit any style gear. Spokes are oval and set staggered. Flat or grooved tires. A big line of steel trucks, wagons, buggies, harness, etc., also in stock. We sell direct to you at wholesale prices. Get our new big FREE Catalog and 48-page Grocery List. They are money savers. Address
GENERAL MERCANTILE CO.,
"The Great Mail Order House"
628 So. 9th St., Omaha, Neb.

Driver Agents Wanted

Drive and demonstrate the Bush Car. Pay for it out of your commissions on sales. My agents are making money. Shipments are prompt. Bush Cars guaranteed or money back. 1918 models ready. Write at once for my 48-page catalog and all particulars. Address J. H. Bush, Pres.

Five-Pass., 34.7 H.P., 32x3½ tires



115-in Wheelbase
Delco Ignition—Elect. Stg. & Ltg. Dept. 11-H
Bush Motor Company, Bush Temple, Chicago, Ill.

Potatoes From Seed

E. R. Bennett, Field Horticulturist, University of Idaho.

All new varieties of fruit and vegetables are produced in one of two ways, i. e., by bud variation—the mutations of the scientists—or by seedlings which may or may not be hybrids. New varieties of potatoes have come about in both of these ways. As an example of the bud sprout or mutation we have the White Early Ohio which is the same except in color as the common Early Ohio, and the Red Peachblow which is a variation of the old White Peachblow. It is not uncommon to find abnormal colorings on any variety of potatoes.

A few years ago we found a Pearl (Pearless) potato in a field at Greeley, Colorado, which had a deep purple spot covering the eye or bud. Normally the Pearl is creamy white with a very delicate shell pink bud. We planted this potato in pots in a greenhouse, the purple eye in one pot, and the normal colored eyes in other pots. The resulting tubers from the purple eye were all deep purple, resembling the Blue Victor in appearance, while the white normal eyes gave pure white normal Pearl potatoes.

New varieties are more commonly developed from seed. True seed from potatoes is not uncommon with some varieties and in some climates. Some varieties, as the Early Ohio, seldom if ever develop fruits at all.

Hybridizing the potato—that is, fertilizing the pistils of the blossoms of one variety with the pollen of another variety—has been done, but it is a difficult and rather unsatisfactory process.

Most of the seed of potatoes is secured from the fruits that occasionally form on the vines in the field. These fruits are either self-pollinated, or accidentally cross pollinated, generally by pollen of the same variety. In any case, the tubers produced from plants grown from seed will show a great variation in character, so that nearly as many different varieties will result as there are different plants.

The potato plant is closely related to the tomato. Its fruits (if it produces any) grow in clusters of from two to one-half dozen, each of which is more or less globe shaped, green, and from one-half to one inch in diameter. If these fruits ripen they may be crushed in a dish, some water added, after which the mass should be allowed to ferment or rot for a few days. This will allow the seed to separate from the tissue, when they may be washed out in the same manner that tomato and egg plant seed are secured. Dry the seed and store in a dry place till spring, as with other seed.

Potato seed should be sown in a greenhouse or hot bed, as the seedlings are delicate and weak; hence, very susceptible to insect injury. The young seedlings may be transplanted to the open ground or remain during the first generation in the seed bed. The tubers of these seedlings will vary in color and shape, and range from the size of a pea to that of an English walnut. The second generation will increase the size of the tubers, but full size will not be obtained till the third or fourth generation.

We have grown many hundreds of such seedlings, many of which are very beautiful potatoes, both as to form and color, but out of the lot none of them were as valuable in a commercial way as such standard varieties as Netted Gem and Early Ohio. We read a statement not long ago that the fruits of the potato had become extinct because of the many generations of reproductions of potatoes by cuttings of tubers. This statement was a little untimely, for the 1917 fields of Netted Gems are well supplied with the potato fruits, and if it would serve any good purpose we could secure almost any quantity of viable potato seed. For the most of us, however, better results in improvement in potatoes will follow if we confine our efforts to building up from the best plants we find in the field.

Fresh air and sunlight combat disease in the stable. Dairy barns should be airy barns. Ventilation is conservation.

Buy Good Rubber Footwear for Your Growing Boys

They are anxious to do a man's work. Give their feet the comfort and protection a worker's feet ought to have.

Get them "Ball-Band" Rubber Footwear. Vacuum cured, practically one solid piece. It keeps their feet warm and dry and gives the greatest number of days wear at the lowest cost per days wear.

Worn by nine and one-half million people. Sold by 55,000 dealers. These are big figures, but they are true. Quality made this possible. Look for the Red Ball Trade Mark and be sure you are getting the genuine "Ball-Band."

Write for Free Booklet, "More Days Wear"
It describes the different kinds of "Ball-Band" Rubber Footwear and shows pictures of it.

MISHAWAKA WOOLEN MFG. CO., 336 Water Street, Mishawaka, Indiana
"The House That Pays Millions for Quality"

When the Mercury Drops

It is mighty nice to come in out of the cold into cozy warmth. With a Perfection Heater you laugh at the weather's pranks. Rooms that were hard to heat become cozy and comfortable.

Good looking, strong and light—Perfection Heaters are built to last. They run 8 hours full blast on a gallon of oil—much longer at a moderate heat.

Sold at hardware, furniture and department stores. For clean, odorless heat use Conoco Safety Oil.

THE CONTINENTAL OIL COMPANY
(A Colorado Corporation)
Denver, Pueblo, Boise, Butte, Salt Lake City, Albuquerque, Cheyenne

Published Semi-Monthly by The Farm Life Publishing Co., Denver, Colo. 14th and Arapahoe Sts.

Entered at the Denver Postoffice as Second Class Matter

WESTERN FARM LIFE

A Western Magazine for Western Farmers and Stockmen

Comprising Ranch and Range, Farmers Life and Fruit Journal, Trans-Mo. Farmer and Ranchman

Largest Circulation of Any Farm Magazine in the West

Volume XIX | DENVER, COLORADO, NOVEMBER 15, 1917 | Number 22

Dean Rurals Do Well In Greeley Potato District

THE FIRST DIGGING OF SPUDS FROM CERTIFIED NEW YORK SEED

SIXTEEN hundred and fifty dollars for a car of seed potatoes looks like a big price. The man who said this is W. R. McClellan, one of the pioneer potato growers of the Greeley district. Readers of Western Farm Life will remember an account of his purchase in the issue of January 1, 1917, with subsequent articles by Mr. McClellan detailing his visit to Eastern potato growing districts. He was seeking the best seed stock of the Rural variety that could be found. On the advice of experts, he went to the Dean potato farm, in southern New York, where he found what he wanted. The car was shipped last March. About 10,000 pounds of the consignment was sold to Rothschild of Greeley for distribution among other growers and the balance of 30,000 pounds of seed practically all went into potato ground on Mr. McClellan's farm west of Greeley.

When digging was in progress about the middle of October Mr. McClellan invited experts and growers into his fields to note the results. Dr. William Stuart, horticulturist of the United States Department of Agriculture, and one of the nation's foremost authorities on potato culture, was among those who watched the digging. Others were Dr. C. F. Clark, agronomist, and Dr. H. G. MacMillan, plant pathologist, both of the United States potato experiment station at Greeley; County Agriculturist Mason E. Knapp, W. A. Ininger, J. F. McCrery and a number of others interested in potato production.

Results were all that could have been expected for the first season. On old ground, very much run down, that had not been in alfalfa for ten years, but was heavily fertilized last spring with sheep manure, the yield was 244 two-bushel sacks per acre. On the same character of soil, where barnyard manure was used, the yield was only 140 sacks per acre. Four hundred loads of manure were used and Mr. McClellan figures the value of this in increased yield to be at least $1,000.

Much of the crop will be sold for seed, which tho not yet in the certified class, was grown from certified New York seed. Next season Mr. McClellan hopes to be able to carry out all the requirements necessary for the production of certified seed. He lost out this year because it was impracticable to rogue out the weak hills under college supervision. A storm just at that time beat down the vines so that roguing would have been extremely slow and difficult, and there was no labor available to do this.

One hill was dug in which were found fourteen potatoes, all but one of marketable size, the total weight of the hill being eight and one-half pounds. This was from a cutting of one ounce, the Wisconsin rule having been followed in cutting the seed.

Mr. McClellan will exhibit at the Wisconsin Potato show, to be held at Madison, November 19 to 24. His exhibit will include the eight and a half pound hill, as well as ten potatoes weighing 8 ounces, ten weighing a pound each, ten weighing 2 pounds or over and several special hills.

The habit of compact growth was one of the features apparent in the digging. The rows were 36 inches apart, which was made possible because the hills do not spread as in most other varieties. Plants grew 11 inches apart in the row this season, but this will be cut down another inch next season, with a view to getting a greater proportion of medium and small sized potatoes. There were too many large ones this year. The big ones go on the market for table use and the smaller sizes will be used for seed, being sorted to about the size growers desire. Mr. McClellan will give growers that visit his farms an opportunity to say about what sizes they would prefer and the screening will be done in accordance with their suggestions.

Five slow irrigations were given the crop, the water being controlled by the use of short joints of pipe at the head of each row.

At the close of the Wisconsin show Mr. McClellan will make a tour of the agricultural colleges of the mountain states, to place some of the seed so that it will receive a wide trial next season. Only 25 sacks are to be allotted to any one grower.

Seed selection of this particular variety has been carried on by Dean in New York for twelve years, with the result that he has developed a Rural potato that not only runs uniform in size of individual tuber, but in number of tubers to the hill, about eight to fourteen, all growing within a fifteen-inch circle.

The yield of Dean Certified Rurals averaged 100 bushels per acre more than the ordinary varieties grown on the McClellan farms. Some certified Rural seed from Wisconsin also was tried out with eminently satisfactory results as to yield, this being 250 sacks to the acre. Mr. McClellan states, however, that the Wisconsin Rurals do not grow in as compact hills as the Deans. They were planted on old alfalfa ground, fertilized by sheep manure.

There are two storage cellars on the farms, one having a capacity of 7,000 sacks, the other 6,000 sacks. The larger one is 95 feet in length, with concrete approaches and seven-foot concrete walls. This is shown in one of the accompanying illustrations.

At the close of an interesting afternoon in the potato fields, the visitors were entertained at Mr. McClellan's home in Greeley. Dean Rurals were "certified" at 100 per cent by those fortunate enough to partake of them baked. After dinner there was a two-hour round-table talk on potatoes. Dr. Stuart made an interesting report on conditions as he had found them recently in the eastern districts; Dr. Clark spoke briefly regarding the work of the United States experiment farm at Greeley. Tests are being made there with varieties, cultural methods, irrigation practice and other features of growing, as well as investigations of potato diseases and methods of control. A forty-acre farm has been leased for ten years for this purpose, the state and federal government co-operating in the experimental and investigational work.

Mountain states potato growers should begin to think about an annual potato show. This region lays claim to growing the finest quality of spuds on the continent. Colorado, Utah and Idaho potatoes command a premium on many markets. In order to put the industry on an organized basis the various scattered districts of the mountain states are urged to get together at least once a year for a potato show and convention. State organizations have been formed in Colorado and Idaho, but no attempt has been made, so far, toward holding a show, such as the Wisconsin growers are holding every fall. The next Wisconsin show is scheduled for Madison, November 19 to 24. This show comprises county booth exhibits of a competitive nature, exhibits of standard variety classes, boys' and girls' potato club exhibits, certified seed exhibit, sorted and graded carlot exhibits, machinery and supplies used in potato culture will be shown and there will be educational and demonstrational exhibits. The United States Department of Agriculture will show various processes of potato utilization. These and other features will make this convention and show of untold value to Wisconsin growers.

There should be a similar exhibition at some central point in the mountain states where the growers of the Greeley, Carbondale, Montrose, San Luis valley and other famous Colorado potato districts, and the growers of Utah and Idaho could bring their show potatoes; where the public could learn what constitutes a good potato, as well as how to prepare it for table use; where the grower would hear from experts on methods of culture and disease control, and where matters of marketing and car supply could be thrashed out and concerted action could be taken to solve many of the problems confronting the industry. Wisconsin has become a leader in matters relating to potato culture because of the progressive spirit of the growers and the support given the industry thru the state legislature. Many of our Western growers should attend the Madison convention and show and then come home and help put on a similar exhibition in 1918.

Harvesting Dean Baking Rurals on McClellan Farm, Greeley. At left is Dr. William Stuart, U. S. Department of Agriculture; in center, W. R. McClellan; at right, one of the McClellan potato storage cellars with a capacity of 7,000 sacks

World's Cattle Shortage Thirty Million Head

WHY IT WILL PAY AMERICAN DAIRY FARMER TO STICK TO BUSINESS

D. H. PROPPS, Dairy Extension, University of Nebraska

A GREAT deal has been said and written lately about whether or not it is going to pay to continue milking cows. Reports have been rife to the effect that dairy cows in the East are being slaughtered in large numbers. Such reports have a tendency to give a false impression of the true situation and convey the idea that the dairy industry is approaching a demoralized condition. It is unquestionably true that an unusually large number of cows from the dairy districts have been sold for beef during the last few months. But is this any more than might be expected under the present circumstances?

The weeding out of inferior cows for larger profits has been persistently advocated for years. It has been repeatedly stated from reliable sources that of the 22,000,000 cows in the United States, at least 7,000,000 are unprofitable because they are naturally low producers. Is it not a source of gratification, then, to learn that the admonition to "weed out" is at last being heeded and that so many of these unprofitable cows are being sold to the butcher? High prices of feed have made necessary closer culling than ever, and no doubt the number of cows coming into the stockyards has been quite noticeable.

It is true that high prices offered by the butcher may claim some cows that might be profitable producers under conditions in which lower feed prices prevail, but it may be safely said that very few, if any, good, high-class dairy cows have been sold in this country for anything other than for dairy purposes. At any rate, they need not have been butchered, for such cows are in constant demand by dairymen everywhere, and at prices far above their value as beef animals.

The most discouraging feature to the man who is milking cows is the fact that advance in the prices of dairy products has not kept pace with advance in the price of feed. The market value of feed has increased in the last few months as much as 220 per cent in some cases, while the prices of dairy products have increased only 25 to 30 per cent. This inconsistency is gradually being adjusted, however, and there is every reason to believe that what might seem to be a gloomy situation is, in reality, a very hopeful outlook.

A slight review of the dairy situation for a few years previous to the beginning of the present war, together with facts and figures as to the present situation, should convince the most pessimistic of the promising and important future of the dairy industry. While there has been an increase of over 5,000,000 cows in the United States since 1900, this increase has barely kept pace with the increase in population. In 1900 there was one cow for every 4.45 persons. There is now one cow for every 4.44 persons. The following table shows that this ratio has remained almost constant since 1870:

Year	Population	Number of Dairy Cows	Number of Persons Per Cow
1870	38,558,371	8,935,332	4.3
1880	50,155,783	12,443,120	4.0
1890	62,947,714	16,511,950	3.8
1900	75,994,575	17,135,633	4.4
1910	91,972,266	20,625,432	4.5

While our average production per cow has undoubtedly increased to a considerable extent in recent years, our increase in total production has by no means kept pace with our total consumption of dairy products. This fact is made clear by the following figures, which show a gradual decrease in exports and a constant increase in imports of dairy products for the three years previous to the beginning of the present war:

	IMPORTS		EXPORTS	
	Butter	Cheese	Butter	Cheese
Year ending June 30, 1912	1,025,668	46,542,007	6,092,235	6,337,560
Year ending June 30, 1913	1,162,253	49,387,944	3,585,600	2,599,051
Year ending June 30, 1914	7,842,022	63,784,313	3,693,597	2,427,577

In 1881 we exported 148 million pounds of cheese. Since that time the quantity exported has been decreasing until in 1914 a little less than 2½ million pounds were exported, and the quantity imported during that year amounted to nearly 64 million pounds, as is indicated by the figures above. It will be noted that our imports of butter during the year 1914 were more than double our exports. These figures are convincing evidence of the fact that our average per capita consumption of dairy products has been rapidly increasing under normal conditions; for, while our increase in production has more than equaled our increase in population, our demand for dairy products has increased to such an extent that, in order to supply this demand, it has been necessary for us to depend more and more upon importations from other countries. This increasing shortage of dairy products under normal conditions should alone be sufficient to arouse in every dairyman a realization of what the future has in store for the industry.

The following figures showing the enormous rate at which our exports have been increasing since the beginning of the war are simply appalling and their significance needs no comment:

	EXPORTS (Lbs.)		
	Butter	Cheese	Condensed Milk
Year ending June 30, 1915	9,850,704	55,362,917	37,235,627
Year ending June 30, 1916	13,503,279	44,394,251	155,734,322
Year ending June 30, 1917	26,835,092	66,087,213	259,102,213

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Why Potatoes "Ran Out" In the Divide District

SANDSTEN SAYS IT'S THE FARMER AND NOT THE SPUD THAT RUNS OUT

POTATOES and cream are the two chief sources of revenue of the farmers in the Monument district, in northern El Paso county, Colorado. This is a part of the Arkansas Divide country, where soil and climatic conditions are favorable for the development of the tuber without the necessity of irrigation. The adaptability of the soil for potatoes was discovered by the earliest settlers forty years ago and later the crop was developed into a carlot shipping proposition. No effort was made, however, to grow potatoes according to good agricultural practice, and the result was that diseases killed the industry.

In the last three years the country has "come back" as a potato section, but it has not been due to any mysterious change in the soil or climate, but as Prof. E. P. Sandsten of the Agricultural college pointed out to the growers at Monument on Potato day, to the application of better methods of farming.

Organization among the farmers and co-operation with County Agriculturist W. H. Lauck have been the means of spreading the knowledge of potato culture, which has been accomplished thru field demonstrations and lectures.

As the farmers became more and more impressed with the necessity for better cultural methods, crop rotation and fertilization, thot naturally turned to the dairy cow as a source of manure. Dairy farming is no new thing in the Monument district. It is one of the established lines, but like potato growing, it soon became evident, in the process of self-examination, that their cows were not "delivering the goods." They depended largely upon range cows and almost exclusively on a short pasture season for their cream.

Now this is being changed. High-class dairy stock is being brot in from Wisconsin. One car arrived early in the summer and at the time this is being written County Agriculturist Lauck and C. S. Mangas, one of the dairy farmers, were again in Wisconsin looking for two more carloads. Many silos have been built and cows are now producing milk thru a longer period.

Potato day at Monument was more than a celebration at which people came to eat potatoes baked in pits. It was a day appointed for casting up the season's results in better farming. During the morning hours several dairy herds that included new stock from Wisconsin were inspected in a farm tour. The afternoon was spent in listening to talks by Prof. Alvin Kezer, agronomist of Colorado Agricultural college, and Prof. E. P. Sandsten, the college potato expert.

Prof. Sandsten had before him exhibits of several popular varieties grown in the district. He was especially attracted by the potatoes of boys' club members. He selected from the exhibit of the Elton Potato club four rurals which he pronounced true to type and these were photographed by Western Farm Life for the cover page of this issue. The adult growers admitted that the boys could show them something worth while in their acre plots, in yield and especially in trueness to type.

After telling the farmers some of the fundamental things about the potato plant Prof. Sandsten continued:

"When you talk of seed potatoes bear in mind that you are dealing with a cutting, something entirely different from the seed of grain. The potato is subject to degeneration, which is not due so much to the running out of the potato, but to the exhaustion of the soil and the poor character of seed used. When you plant small potatoes and culls you are not taking the cutting from the best potatoes. Usually it is the farmer that runs out and not the potato. Soil conditions have more to do with the growth and development of the potato than people imagine. Often we plant a rough, gnarly tuber and get a smooth tuber from this planting. Gnarly potatoes are caused by soil and moisture conditions.

"In soil not adapted to potatoes there follows a lessening or lowering of the vitality. We must have soil capable of sustaining the plant and to get it we must put something back into the soil, either in the way of a green crop plowed under, or stable manure. You have found this out and are profiting by it, for, as you say, your section is coming back as a potato producing section. This coming back is not due to any change in your climatic conditions, but is due to better farming. You started with virgin soil and you planted potatoes until you exhausted the fertility and now you have learned the necessity of putting something back into the soil."

Prof. Sandsten then spoke on potato diseases, after which he urged the growers to ask questions. One grower said that he had several rows of potatoes one year that were shaded, while other rows were subjected to direct sunlight. There came a heavy shower in the middle of the day. Those that were in the sun were badly scalded, but those in the shaded portion of the field made a good crop. He wanted to know if the rain and hot sun were the cause of the disease that developed. The answer was that these conditions were ideal for the rapid development of disease already existing and not the cause of the disease.

Advice followed on seed selection by staking the most thrifty and vigorous plants, saving for seed the potatoes from such selected hills.

"How many eyes to the cutting for seed would you advise?" asked a grower.

"Two eyes to the piece for this section; one eye to the piece under irrigation. A good sized cutting with one eye will develop into a strong shoot, under proper conditions of moisture and soil, and potatoes on a one-stem vine are usually larger, tho fewer in a hill. Five or six shoots or stems means many small potatoes."

There was a lively interchange of questions and answers, the growers getting much valuable information from Prof. Sandsten. He closed with the advice to stick to potatoes year after year, that being the only way to make a success of the crop.—A. T. S.

Dairy herd on pasture, C. S. Mangas, near Monument

Silage for Beef Production on Our Irrigated Lands

CUTS COST OF MEAT MAKING AND INCREASES PROFITS ON CORN

HOWARD M. JAY
Proprietor Jarosa Ranch

THERE is but one side to the silo argument if you are a corn grower and wish to increase your profits on that crop. You have only to compare the cost of producing matured corn and its market value in the silo with the same crop put thru the silo, which saves both grain and stalks, in order to reach your conclusion. But how about the man who does not grow corn? Let us consider for his benefit how ensilage will fit into his program as compared with some of the other crops he is now growing. Consider the following figures in comparison with figures on some crops you are now producing:

Cost of producing an acre of corn for the silo:

Rent of land	$10.00
Plowing	2.50
Harrowing and leveling	.75
Planting	.50
Seed	.48
Cultivating three times	1.50
Irrigating	1.00
Depreciation of tools	.50
Cutting	1.00
Putting into silo	15.00
	$33.23

I believe you will agree with me that the above figures are conservative and will show even a little profit on the cost of production; at least, will allow you good pay for every minute of time you put on the crop and for all money expended, as well as a reasonable rental for your land.

Now, then, if you are entitled to make all of the above charges against each acre of corn you are producing, you will have every reason to credit a 5-ton crop per acre. On a basis of 15 tons per acre, at about the average selling price in this district for such ensilage as you should be able to produce with special care, or $6 a ton, you would receive $90 per acre for a crop which has cost you $33.23 to produce, leaving a net profit of $56.77 per acre. This certainly shows a better margin of profit than a great many of the crops that you are producing. Of course, these particular figures might not fit your particular condition, but as a rule where the gross income is not so great, you would not be entitled to charge quite so great an expense.

You might question the value of ensilage as above given, but I say it is worth what you can get for it, or what experienced feeders are willing to pay for it. If they can make a profit on it at this price it certainly must be the market value. This is the price regularly paid for it the past two years in our locality.

(Note.—Mr. Jay's article was written before the 1917 silage was put up. Present figures are abnormally high, as much as $13 per ton having been paid for ensilage by a cattle feeder in Boulder county recently. It is apparent, therefore, that the average price given, namely $6 a ton, applies to normal times and is quite conservative.—Editor.

The price of ensilage is usually governed by the price of alfalfa hay, not because of their relative feeding value, but probably because for stock cattle, ensilage, when obtainable, is used quite as much as alfalfa hay. However, it is not recommended to be fed in this way. Alfalfa helps so much to balance the ration that a smaller quantity of both alfalfa and ensilage combined may be fed than if either is used alone. Silage is now successfully fed and sought after by sheep, beef, stock and dairy cattle feeders, as well as by horsemen. On account of hogs wasting so much of it, it has not been found profitable to feed in large quantities to that class of stock. However, a great many hog breeders have found it a very important part of the ration for brood sows.

The mistaken idea that the silo is for the dairyman can no longer be entertained. At the various stockyards now one finds men connected with the packing industry who are strong boosters for the silo and who claim that it is a big factor in replenishing the cattle supply. During the past few years silage fed cattle have topped the market repeatedly with record prices and it is no longer necessary to conceal their identity to evade discrimination. In fact, the discrimination, if any, now leans the other way. This kind of evidence affecting the pocketbook has served to dispel prejudice formerly existing against silage for beef cattle.

A great many experiments have been carried on in feeding silage for finishing beef cattle, and it is well worth our time to briefly consider some of the results.

In Nebraska Station Bulletin No. 132 the statement is made that corn silage made larger and more profitable gains with steers than did corn stover, used one-third less grain and produced better finished steers, which were worth more per hundred.

The Pennsylvania Station, in Bulletin No. 124, shows that the net profits during the years 1912-13 in cattle feeding tests (not including the pork produced), ranged from $11.22 for steers fed silage and hay to $14.09 per head for steers fed corn silage as a sole roughage.

The Missouri Station found in a steer feeding experiment where corn silage was compared with hay, that they could make a saving of $1.07 per hundred pounds of beef by using silage.

In Bulletin No. 169 of the South Carolina Station, in a test comparing silage, corn stover and cottonseed hulls, the corn silage gave by far the best returns, not only in feeding profits, but in the quality of the beef and the shape in which it reached the market.

The University of Missouri College of Agriculture has recently published data from two feeding tests which are of interest, especially with the present high cost of feeds and beef. Seventy head of two-year-old steers were fed in two tests conducted during two different years—first, to secure data concerning the possibility of fattening cattle by the extensive use of corn silage without the use of additional corn in the ration; second, to study the importance of a high protein concentrate when combined in a ration of shelled corn, corn silage and alfalfa hay; third, to compare the relative value of old process linseed oil meal and cottonseed meal in rations containing corn silage. The first test was conducted during the winter of 1915-16 and the second during 1916-17. The two tests lasted 133 days and 130 days, respectively.

In both years the cattle which received a liberal allowance of corn silage with alfalfa hay and cottonseed meal or linseed oil meal made the cheapest gains. The steers in the first trial which received cottonseed meal, corn silage and alfalfa hay made a profit of $9.87 per steer. The cost of gain per hundred pounds, with the gain on hogs credited at $8 a hundred, was $10.15. The cost per hundred pounds gain on the steers which received linseed oil meal, corn silage and alfalfa hay was $8.57, and the profit per steer was $14.56. During the second trial the cheapest gains were likewise made by the steers which received cottonseed meal, corn silage and alfalfa hay; linseed oil meal, corn silage and alfalfa hay. The cost of gain per hundred pounds on cattle, with the gain on hogs credited at $13 a hundred, was $14.28 in the case of the lot which received cottonseed meal, corn silage and alfalfa hay; and $14.06 in the case of the lot which received linseed oil meal, corn silage and alfalfa hay. The profit per steer was $11.59 and $15.62, respectively. With corn at $1 a bushel and silage at $6 per ton the profit per steer would have been $19.38 and $23.57.

The following is an extract of the conclusions drawn from the experiments by H. O. Allison, who conducted the investigations: "The records of feed as fed in the lots receiving cottonseed meal or linseed oil meal with corn silage and alfalfa hay show the possibility of fattening from three to four 2-year-old steers per acre of corn. The average daily gains in live weight made by the cattle in the lots which received no corn other than that contained in the silage, while not as large as those in the lots where shelled corn was fed, were satisfactory for fattening cattle. The average daily gains in live weight on the cattle were increased by the addition of a high protein concentrate to shelled corn, corn silage and alfalfa hay. The gain made by the hogs was greater in the lots which received linseed oil meal than in those which received cottonseed meal, both when combined with shelled corn and when fed without corn.

"The steers which did not receive shelled corn in their rations, altho not the best, were sufficiently satisfactory to command a good price and to make a good grade of beef. As indicated by the net profit per steer, the difference in the market price of the cattle was not sufficient to justify the feeding of shelled corn in the first trial. In the second trial this difference was sufficient to justify the feeding of corn at $1 a bushel and silage at $6 a ton, but it was not sufficient to justify the feeding of corn at $1.50 a bushel and silage at $11.50 a ton.

"Judging from the two tests, it may be said that it is ordinarily advisable to feed a high protein concentrate to fattening cattle which receive shelled corn, corn silage and alfalfa hay. The net profit per steer was greater in both trials in the lots which received linseed oil meal rather than cottonseed meal, both when fed with shelled corn and without corn."

The position that ensilage holds among the big beef producers of the United States is clearly shown by H. M. Cottrell, a noted agricultural authority, who makes the statement that an adequate supply of beef can be secured only by the stockmen thruout the country adopting silage as a basis for their feeding ration, both for growing and for fattening cattle. The cost of making beef with grain and dry forage is prohibitive, and farmers find it more profitable to sell their grain than to feed it.

A test shows that taking a steer from birth to three years of age, when he was marketed fat, required 38 pounds of feed for each pound of gain. A large number of tests show that, with dry feeds, ten pounds of grain and five pounds of hay are required for each pound of gain in fattening for beef. At present prices of grain and hay, figure for yourself the cost of making beef with dry feeds, but bear in mind also that silage saves a large portion of the grain needed for fattening. It fills the need for grain while cattle are growing. Silage fed cattle gain faster than those on dry feeds and they finish quicker and the meat is better marbled.

Cattle fed silage while finishing require 30 per cent less grain to make each hundred pounds of increase in weight than those on dry feeds. Silage makes a saving of 50 per cent in grain over ordinary methods of feeding. So you will see on our high priced land that silage is of special advantage, as it nearly doubles the carrying capacity of the land.

Unsatisfactory results with silage by our farmers have been usually due to mistakes. We are new to the game and our experiences have been teaching us. The properly balanced ration is the main thing in getting results with any feeding plan and, when this is lost sight of, failure is sure to follow. One thing we have learned thru our county agriculturist by experiments made at considerable expense right here in our own district, and that is, that it is absolute folly to attempt to produce corn silage from anything except home-grown seed. We cannot afford to take chances with Eastern grown corn. On the other hand, with a good variety of Colorado grown seed, Minnesota No. 13 being the most popular of these, we can mature corn even under unfavorable conditions. Good ensilage, either for fattening or milk production, must contain matured corn; that is to say, corn past the dent stage, so that good plump kernels are in evidence all thru the ensilage after it is made.

In spite of the fact that unsatisfactory results are reported by many farmers who have fed ensilage to horses, the purebred mares and colts on our ranch do receive fairly large quantities of ensilage each day during the winter season, with no bad results. We have never lost a purebred or a grade animal of any kind from this cause. However, there are a few things to watch when feeding ensilage to horses. You no doubt are familiar with the dry smut which has killed a good many animals in the East. Very often we leave our corn until this smut accumulates and it is then cut and put into the silo. Usually this smut will make gas pockets in your ensilage and will ultimately develop a reddish brown mold thru the process of fermentation. This is dangerous to feed to horses and should be thrown out. Only well-matured, properly packed and perfectly sweet silage with no mold in evidence, should be fed to horses.

It is to be regretted that we have been so slow to take advantage of the silo. We do not like to be called behind the times, but isn't it a fact, when we consider the history of the silo and the missionary work done for it by the agricultural colleges and others interested, that we have been very slow to take advantage of this wonderful dividend paying, attractive farm improvement?

GOING OVER THE TOP OF A PIT SILO
Ensilage Cutter at Work on Bowman Ranch, El Paso County, Colorado

Silage is the best and cheapest form in which a succulent feed can be provided for winter use. An acre of corn can be placed in the silo at a cost not exceeding that of shocking, husking, grinding and shredding. Crops can be put into the silo during weather that could not be utilized in making hay or curing fodder. There is less waste in feeding silage than in feeding fodder. Silage is very palatable and like other succulent feeds silage has a beneficial effect on the digestive organs. More stock can be kept on a given area of land with silage.

Trees of the Semi-Arid Region

WHAT CAN BE DONE WITH THE NATIVE SPECIES

E. R. PARSONS

MANY years ago when the writer settled in the dry country all the farming was done by irrigation and people generally had no idea that anything could be raised without it. There were some, however, who, being close observers, arrived at a different conclusion, based on the fact that there were many feed grasses and clovers growing wild, trees on the hills, wild fruit in the valleys and some years even hay on the uplands.

Wherever plants grow wild in a state of nature it is an even bet that they will grow twice as well under cultivation.

The ultimate test of soil is not analysis, but what it will produce. The best record of precipitation to the man who can read nature's secrets is not the weather statistics, but the native vegetation on the hills. Where the sagebrush grows in profusion, crops will do the same. Where the pinon and chokecherry flourish, orchards can be raised.

Years ago many were afraid to plant trees; but surely their fears were unfounded, when almost all the yellow pine lumber which was used in the building of Denver was secured from the foothills and the divide country, where the precipitation is seldom much over 15 inches.

Of all the trees which grow in the West, the blue ribbon for drouth resistance should be given to the pinon pine and the juniper. In southern Colorado and the western slopes these not only grow in the hills where nothing else will grow, but even invade the plains and deserts, holding their own with the sagebrush in places where the precipitation is as low as 8 to 10 inches.

On the eastern slope in the foothills, west of Denver, occasionally on the divide and also in the Pike's Peak National Forest the juniper is found growing, here and there singly, in out-of-the-way corners and, under an 18-inch precipitation, makes a handsome tree or bush from 10 to 20 feet high in the wild state. Its companion on the western slope, the pinon pine, bears edible nuts and is of value for firewood, but is not used to any extent for decorative purposes or for lumber. But the juniper when cultivated is not only a handsome garden shrub but may be planted close, and in a few years will provide a beautiful hedge which may be trained to almost any shape and kept clipped like the cypress hedges of California.

Juniper Holds Its Color

It is often called the white cedar and in summer is much like its brother, the little red cedar of the low mountains and foothills; but while the latter turns brown in winter, the juniper holds its bright green color thruout the year. Either of these, however, is easily raised in any garden with ordinary cultivation without watering.

A tree which is valuable both for ornamental and economic purposes is the Douglas fir, which, together with the yellow pine, is found on the divide, the foothills and the low ranges. This tree is not quite such a sturdy drouth resister as the juniper, but will do very well under cultivation on a 14-inch precipitation. It is also called the Douglas spruce and is known locally as the red spruce. It supplies valuable lumber for joists, rafters and two-by-fours. As a dry farm tree there is none better for windbreaks, avenue purposes, or as an ornament in the garden, or around the house.

If planted in rows and cultivated the Douglas fir when once established may grow two feet in a season, and being an evergreen is always on the job as a windbreak, catching huge snowdrifts in winter, which materially increases its moisture supply.

The blue or silver spruce, the state tree of Colorado, is the most beautiful of all for decorative purposes, and may be seen in almost any Denver garden. It requires about the same precipitation as the Douglas fir, but is not quite so hardy or so fast a grower. The young trees of both these varieties are found growing almost anywhere in the low ranges and may be easily transplanted when less than two feet in height.

The white pine (Pinus strobus) of Chicago lumber fame unfortunately does not grow on our Rocky Mountains. We have, however, a good substitute in the yellow pine, the wood of which, known as Colorado lumber, is good for most ordinary purposes.

The tall pine trees that are seen on the divide even 50 miles east of the main ranges belong to this variety. They are thick along the South Platte in the Rampart Range and thruout the Pike's Peak forest. The young trees under adverse conditions often become stunted and are called various names by the settlers, such as bull pines, pitch pines, jack pines, etc.

Is a Good Drouth Resister

The tree itself is a great drouth resister and may often be found in dry years wintering in soil in which there is no perceptible moisture. When planted young and raised under good methods of cultivation it grows more quickly than in its native habitat, the foliage is denser and brighter, and it becomes quite a handsome tree.

The yellow pine and Douglas fir grow in the same zone up to about 8,000 feet altitude, when they run into the belts of lodgepole pine and above that the Engelmann spruce, the king of the mountain tops, from which is derived the finest of the spruce lumber for building purposes.

The trees of the high ranges which flourish in a cool environment of much snow in winter and heavy thunderstorms in summer are not adapted to dry farm planting. For deciduous trees we have to rely on eastern or exotic varieties, for the natives, with the possible exception of the quaking aspen, are found only on bottoms above a water table, or on subirrigated benches.

The quaking aspen is growing in some gardens and parks and can do with much less water than the cottonwood. The box elder, the western representative of the maple family, is more hardy and will flourish with less water than any eastern maple, which often winter-kills at mile-high altitudes. In western Nebraska and Kansas, also occasionally in eastern Colorado, the box elder is found growing on high and dry benches where the precipitation is about 18 inches. Under cultivation it should do well with 15 inches.

The evergreens, altho they hold their foliage all winter, never seem to be injured in any way by frost. They are absolutely hardy even at 40 below zero. This immunity to the effects of low temperature is attributed to the saturation of the wood and leaves with pitch and tar, the best kind of anti-freezing mixture. Some varieties are so heavily loaded with these substances that it pays to extract them for commercial purposes.

The tar is obtained by distillation from the wood. The pitch is bled from the tree itself and yields resin and turpentine. The turpentine is very volatile and when the roots of evergreens are exposed to the outer air it evaporates very rapidly, causing the resin to congeal, which, by blocking the ducts, may injure or destroy the tree. For this reason all evergreens must be transplanted with a ball of earth around the roots.

Trouble in Transplanting

In transplanting from the mountains the main trouble is want of a good root structure on the part of the young trees. There are many nurserymen who obtain them from the moun-

Turn to Page 11

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Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and thru the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Information About Bots

Answer to W. E., Boone, Colo., regarding bots in horses:

Bots are larval forms of certain flies belonging to the family Oestridas. There are four different flies in the United States which may give rise to bots in the horse, namely Gastrophilus equi, G. hemorrhoidalis, G. pecorum and G. Nasalis. These flies are about the size of honey-bees, hairy, and their mouth parts are either rudimentary or absent. The life histories of all these flies are about the same. The G. equi causes the common horse bot. Its eggs are yellow and are attached by a cement principally to the hairs of the shoulders, forelegs and belly regions of the horse. These eggs are a common sight during the summer and fall months.

The eggs of the G. nasalis or "chin fly" are white, and they are attached to the hairs around the nostrils and lips. The G. hemorrhoidalis, which gives rise to the red-talled bot, lays eggs dark brown to black in color, and which are attached to hairs on the lip. The G. pecorum is so rare in the United States that it hardly needs consideration.

The eggs hatch in about two to three weeks, the young grub pushing open the cap on the large end of the egg. These larvae may find their way into the mouth, generally thru the horse licking them. The young grub, upon being swallowed, attaches itself by means of hooklets to the inside lining of the stomach. Here they develop and grow for about 10 months. The grubs of the G. hemorrhoidalis, or red-talled bots, are also found sometimes in the first part of the small intestines or duodenum, occasionally in the pharynx, and often in the rectum, where they cause considerable tail rubbing, due to their irritation. These are more injurious than the other kinds. The G. nasalis grubs are found principally in the duodenum or first part of the small intestines.

After the bots are fully matured (in about 10 months) they loosen their hold, pass out of the animal, and burrow into the ground, where after a month's pupation, emerge as the adult fly.

Nearly every horse harbors bots. The amount of injury may be negligible to severe digestive disturbances. The animal may become unthrifty, yawn, and bots may be seen in the manure.

Prevention should be practiced, and the eggs should be clipped from the animal, or touched with kerosene or gasoline every two weeks during the egg season. The manure during the summer and fall may be sprinkled with sheep dip to destroy bots, and thus prevent the maturing of the adult fly.

We should not jump at conclusions and always blame bots as causing the death of horses. While no doubt this is possible, it would be well to have a thoro survey of each case by a competent veterinarian to exclude the possibility of other causes.

In treating animals for bots, get your nearest veterinary adviser, and if none is in your community, we can supply you with the treatment at cost.

H. S. EAKINS,
Veterinary Parasitologist,
Colorado Agricultural College.

Symptoms of Glanders

We have a horse with hard bumps on his hind legs and hips, some the size of a pea and some larger and smaller than a pea. There isn't any matter in them, but they break and a scab comes and it heals but leaves a hole about the size of a pea there and another such bump comes on the side of that one and acts the same, and so on. Is there any cure for such a case? If so, please tell us and what the name of the disease is and how to treat it.—M. N., Pueblo, Colo.

The symptoms given rather indicate glanders, an incurable disease. This disease is also communicable to the human and should be looked after without delay. Take the horse to Dr. A. N. Carroll in Pueblo for examination. If it proves to be glanders, the state veterinarian, Dr. Charles G. Lamb, state capitol, Denver, should be notified at once. If it is not glanders Dr. Carroll can best advise you. Possibly it is horse pox, fungus infection, or caused by external parasites.

Lumpy Jaw in Cattle

Answer to W. W. L., El Paso county, Colo.:

"Big jaw," "lumpy jaw" or actinomycosis is a disease caused by a fungus (vegetable) and develops more frequently on the jaws, or around the throat of cattle. The fungus is a parasite that first grows in the lawns of various grasses, barley, etc., and is transmitted to the tissues about the mouth by inoculation. Occasionally, however, the tongue (wooden-tongue), liver, lungs, or other organs are affected. Other animals are largely immune. The human is occasionally affected. Successful treatment must rely largely upon surgery. There is no excuse for losing cattle with this disease. When the tumors first appear they should be extirpated without delay. After they have become firmly attached to surrounding tissue surgery alone will not always succeed. In this case, and where deeper structures are involved, like the lungs, tongue, etc., systematic treatment if properly administered will effect a cure in many cases. The fungus has a strong affinity for iodine and this drug is sometimes used locally in connection with surgery. The potassium iodide treatment used internally is remarkably successful, but just now is very expensive. The treatment, however, is worth trying on valuable animals. The treatment, if undertaken, should be under the immediate supervision of a veterinarian, or at least only after detailed directions, since the drug is poisonous in large doses.—Geo. H. Glover, Veterinary Dept., Colo. Agricultural College.

Mare Has Sore Shoulders

We have a six-year-old mare that we have worked for two years and she has never had sore shoulders or neck until about six or eight weeks ago when there appeared a small lump on her right shoulder near the lower part of contact with the collar. This lump has grown until it is as large as a man's fist and is quite hard. There are several smaller lumps appearing near this large one as also on the other shoulder. The skin is smooth and soft over these lumps, the hair not even being worn away on any of them. Can you tell us what causes these and what to do for them?—C. C. P., Willard, Colo.

The deep structures in the mare's shoulders have been injured. Look to the collar. When the collar becomes flat on the surface next to the shoulder it is not fit to use. Sweat pads cause trouble. If the collar becomes too large, buy a new one, and do not try to fill the space with a sweat pad. A good, hard leather collar that fits seldom causes sore shoulders. Clean the collar every morning. The inflammation will be liable to leave a callous (sitfast) which will need to be removed surgically. A horse pulling against a collar, with a callous on the shoulder, is like a man trying to walk with a trouser's button in his shoe. If you can apply a collar in such a way as to relieve the pressure on the sore, well and good, but this effort usually results in further injury to the shoulder. The mare can be worked with a breast collar, and this should be done for at least six months. Home remedies may be used, like hot salt water, milk liniments, and hot poultices.—Geo. H. Glover, Veterinary Department, Colorado Agricultural College.

Cow Has a Cough

We have a cow which did very well until last spring when she developed a cough after being fed some musty alfalfa hay. She just gave a hacking cough every little while—did not keep it up long. She is some better now but does not pick up as she should. Can you give me advice regarding this case?—B. F. P., Washington Co.

The cough is not a special indication of tuberculosis. Tuberculous cattle are not as often affected in the lungs as are people, and when they are so affected, are not inclined to cough as much. Cattle cough from digestive disturbances and irritation in the throat due to eating musty hay. It is doubtful if her unsatisfactory condition has any relation to the cough. Feed only clean feed. The cough will probably disappear soon. If tuberculosis is suspected, by a gradual emaciation and swelling of the lymph glands, the tuberculin test should be given. Remember that hogs, even more than cattle, associating with a tuberculous cow, are quite sure to become affected in a short time.—G. H. G.

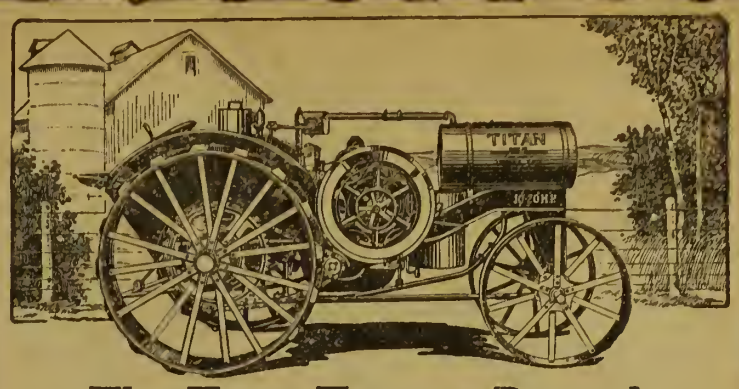
Sodium Arsenite to Kill Weeds

Experiments are under way in Madison county, Idaho, to test the efficiency of sodium arsenite applied in a spray in controlling bind weed, Canada thistle, and other noxious weeds. For roadside patches or fields in which other crops may not be injured, this may be an effective method of control, according to County Agriculturist D. P. Murray. This work will be carefully followed up. Now that the entire county has been made into a weed district, on petition of the farm bureau, a very great interest in weed control is being shown. One very dangerous field of quack grass has been plowed up before seeds matured.

A Homestead Question

Answer to homestead question of S. V.:

In case of the death of an entryman before he has perfected his entry, his rights pass to those persons who would inherit his lands according to the laws of the state in which the entry is located, or if he leaves a will, to those to whom he devises such lands. The heirs are not required to settle or reside on the land, but must show that the land has been cultivated and improved by them or in their behalf as required by the homestead law, for the proper period.



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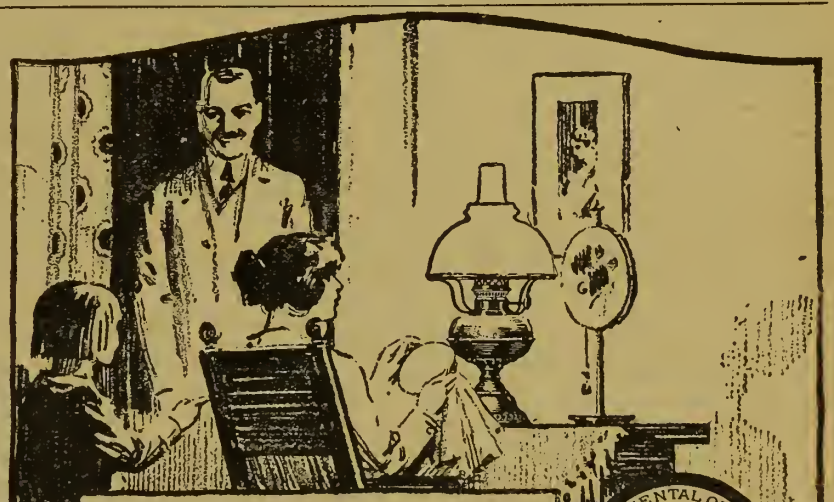

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Giving Thanks

Thanksgiving day in 1917? Why not? Have we nothing to be grateful for?

If we stop and think of the fate of the Belgians, the Serbs and the Armenians; of the suffering among the people of all lands where there is war, can we come to any other conclusion than that we, of all nations, are most favored?

We are favored because we have plenty and can share our surplus with the less fortunate. One year ago we said we were favored because we had kept OUT of the war. This year we say with the conviction of truth and a holy cause, we are favored because we are IN the war.

We are in the war to help free the world from the medieval fallacy of the Divine Right of Kings and to separate the last of the line—William of Hohenzollern—from his self-assumed partnership with God, thru which all humanity has been outraged and the Diety blasphemed. Let our Thanksgiving be a day of reflection and not of feasting; a day of dedication to our country's cause.

✦ ✦ ✦

The Farmer and Car Shortage

That the problem of the fruit grower in the mountain states is one of distribution and transportation and not of production, has long been evident. It has been emphasized again and again that choice fruit brings good prices if gotten to the right market. An illuminating letter on this point was received some weeks ago by a grower in the Paonia district of Colorado, regarding a carload of peaches shipped to Hutchinson, Kansas, at the order of a Woman's club in the Kansas town. This club wanted to be doing something toward food conservation, hence ordered a car of Colorado peaches. When the car arrived there were more buyers on hand than could be served. The letter from a Hutchinson woman tells the story:

"We went to the peach sale yesterday morning, and such a jam! Mrs. W. had more than her hands full. Three policemen stood by her and helped her make change. Everybody had to line up and Mrs. W. gave them a ticket showing the number of bushels they had paid for. They then passed to the truck in front of the car and it took three men to hand the baskets out of the car. Everything was gone in two hours and settled for in short order. Lots of people turned away. One man came forty miles and got none."

In the district from which this car came there were heavy losses because the railroad company failed to have cars iced at the right time, inability to procure labor being the excuse. In other years these losses have been due to the fact that there were no cars. The car distribution this year was better than usual in the fruit districts, tho potato growers suffered severely. The trouble goes right back to the transportation problem. There are not enough cars. Sometimes when cars are available there is a shortage of locomotives; again crews cannot be had when and where they are wanted. The excuse was made this year that many men had entered the government service, some drawn by the selective draft, others volunteering. A good many of these excuses have been legitimate, but back of them lies the fundamental trouble affecting practically all railroads, a lack of equipment to meet any unusual demand.

The problem has become so acute in the fruit and potato districts that concerted action on the part of the growers is hinted at. This action may assume the shape of damage suits covering losses due to car shortage involving millions of dollars. The grower has hitherto shouldered the burden of loss because the attitude of the transportation companies has been one of utter helplessness, as tho car shortage were attributable to causes beyond their control, in the same classification as wrecks, tornadoes, snowslides or fires, known in contract parlance as "acts of God." The time has come when someone must assume responsibility for these periodical losses.

It doesn't help the producer to have the president of a railroad throw up his hands in an emergency and say to the government "Come on and take over the railroad, we can't run it." That doesn't reimburse the grower for hundreds of cars of fruit or vegetables rotting on the ground or in the trees. The railroads say they are unable to get the capital to make the improvements increasing traffic demands. Undoubtedly that is true, but why should the producer suffer? In a great many cases he is growing fruits or truck crops where he is because the same railroad company that now is helpless to move the traffic induced him to settle there, invest his money in high-priced lands by rosy pictures of enormous yields and big money returns.

The whole trouble with our transportation systems is lack of personal conscience in administration. Boards of directors are so much concerned with financial problems and matters of dividends to stockholders that the officers responsible for administration are forced to consider relationship between the company and its patrons of secondary importance. The emphasis is on earnings, earnings, earnings, instead of on service.

The matter of better financing of the weak roads now in receivership, tottering on the brink, or perhaps just emerging from the care of a court, is a problem that will be met at the close of the war, but when it is met a new policy in management will have to be inaugurated that derives its inspiration not from a closefisted, grasping financial group, but directly from the public. The patron will have to be considered paramount in the new deal if the railroads as privately-owned utilities are to survive.

✦ ✦ ✦

The housekeeper who has sour cream on hand never need be at a loss to know how to use it. It contains a large percentage of butter fats and it is wetting and shortening in one for many batters and doughs. Many who have used it in making biscuits and for the foundation of the best of ginger bread and molasses cake can testify to its uses. When very rich and thick no other shortening is needed. To use it allow one level teaspoonful of soda to one of sour cream. Do not dissolve the soda in water, but sift it thru a fine wire sieve directly into the cream, then stir with a spoon until the cream rises. Everything else should be in readiness before this is done and as soon as the biscuit or cake is cut out or beaten it should be baked.

In Defense of the Farmer's Loyalty

Lately the newspapers have published two articles charging the farmer with disloyalty. The first was an interview given out by E. D. Hulbert, president of the Merchants Loan & Trust company of Chicago, one of the large financial houses of the West; the second was an article based on official farm prices given out by the United States Department of Agriculture, showing an average increase of 52 per cent in livestock prices paid the producer, with comment by the newspapers that the farmer is making big war profits.

The statement credited to Hulbert is so outrageously false and contrary to the real attitude of the American farmer toward the war that one wonders if the man uttering it has lost his senses, or is deliberately libeling the farmer with the subtle intention of creating discord and playing into the hands of the enemy. In either case the farmer is justified in remembering for a long time to come just what opinion is held of him by the chief officer of the Merchants Loan & Trust company. Here is one paragraph from the interview that sums up Hulbert's charge:

"The one weak spot is the attitude of the farmers. They will neither buy Liberty bonds, pay taxes, sell their product, or fight. They have profited thruout the entire period of the war, but are unwilling to help the government in any of the four ways mentioned."

As if to bolster up the statement of the banker, the dispatches, a few days later, brot the statement credited to the Department of Agriculture that advances in beef cattle had been 28 per cent; veal calves, 26 per cent; sheep, 61 per cent; lambs, 59 per cent; hogs, 70 per cent; poultry, 27 per cent.

These figures may or may not be correct. The farmer may admit that they are correct, but why does not the Department of Agriculture, in giving them out, call attention to increased costs of production that much more than offset the higher farm prices?

For a long time the cry was against the middleman, but since that individual has been more or less Hooverized a new goat had to be found, and the farmer was selected, mainly because he does not kick back.

Consider Hulbert's charge that the farmer does not buy Liberty bonds. Isn't it a fact that the entire country, from end to end, has been districted; that every bank in the nation has been a sales agency for Liberty bonds and a buyer of bonds; that practically every district has done its share in taking the big loan and that the money of the farmer has been used by the country banks to purchase their quota? There has been no house-to-house canvass in the country, but it has not been necessary. The farmer who has any surplus cash keeps it in the bank and doesn't hoard it in a sock or a postal savings account, like hundreds of thousands of town dwellers from foreign lands in the city where Hulbert makes his home. This farm cash has done more than its proportionate share in buying Liberty bonds and at a time when the farmer, supposed to be rolling in wealth, is under the same extraordinary pressure regarding finances that has hit every other class of business.

Again regarding the Liberty loan: The farmer does not brag about his bond investments. He feels that the country is doing him a favor by allowing him to invest his savings in gilt-edged securities. This isn't his sacrifice; it is his opportunity, and he does not see in this opportunity any particular cause to pat himself on the back, as is perhaps the fashion of some bankers like Hulbert who believe they have made the supreme sacrifice when they have invested the farmer's money in Liberty bonds.

What else has the farmer done? He has gone to war; his sons have gone at their country's call. There are many thousands of farm boys in the training camps now; some are already in France. The Congress gave us a selective draft law which was not always administered with wisdom and justice, and many boys who should have remained on the farm to produce food were taken. But it's all in the game. The farmer is not complaining. He regrets the necessity for war, but he is in it to the point of his life and his means.

What did he do in regard to food production? Immediately answered the call of President Wilson and planted the greatest acreage in the history of the country. When harvest time came what happened? He found himself stripped of labor, short of cars, held up by the I. W. W., threatened by adverse weather conditions, facing a fixed price on his principal staple, wheat; all of this on top of a season in which he had to pay literally double for everything he wears, every implement he bought, every bushel of seed, every box or bag used in packing his products, every sack of flour, every pound of food and groceries needed for his table; double price for everything bought to feed the extra hands needed in harvest season; and this to hands who were inexperienced, often arrogant and ugly; usually lazy and incompetent. He gritted his teeth and went after the job and it was about done, when down from the mountains came an abnormal October blizzard that sent temperatures to zero, catching many cars of potatoes and other root crops still in the ground, hundreds of tons of apples on the trees, cattle still out on the range suffering in the snow. What did he do then? Signed up for another Liberty bond and wrote the boy a card out at Linda Vista or down in North Carolina, and told him to keep up his courage and get ready to "go over the top and at them."

And what about the farmer boy in the cantonment? Out of his thirty dollars a month he subscribed two-thirds for Liberty bonds. One FARMER company at Camp Funston took $15,000 worth of bonds.

And what is his public reward and recognition? Abuse and misrepresentation.

A word here to David F. Houston, Secretary of Agriculture: If there was ever a time when judgment should be exercised in the character of the information given out at Washington, it is now. So please ask your statisticians to accompany any figures on farm prices with corresponding farm costs. You are not responsible for the use made of figures by a sensational section of the press, but you are guilty if you do not give out both sides of the story.

As for you, Mr. Hulbert: if profound ignorance of agricultural conditions and affairs is responsible for your statement, it is probably too late to attempt to open your mind to the other side of the picture, because you, in your position as a leading banker, interested in other large enterprises and some service as director of a railroad property that draws its revenue almost exclusively from agriculture, have had ample opportunity to learn. If, on the other hand, you made this attack deliberately and advisedly with a view to stirring up animosity and discouragement, you have succeeded in taking the heart out of many a good man who has been working night and day to produce food for this nation and her allies; who has given his flesh and blood to the country and who suffers from abnormal living costs equally as much as the average city dweller and much more than does the banker who lives by the sweat he wipes from the other fellow's dollar.

Alvin T. Steinel
Managing Editor.

Comment by Farmer Putnam

MISSOURIAN HAS SOMETHING TO SAY ABOUT HOOVER'S FOOD CONSERVATION PROGRAM

THE other day I got a letter from Herb. Hoover down to Washington askin' me to observe one moatless and one wheatless day every week, so I wired right back to him: "Germany's as good as lickod; I'm observin' meatless and wheatless days."

I made a mistake not takin' it up fust with Josephino—that's my wife. She is patriotic alright and wants to do her bit, but sho won't take orders offen me. I sez to her: "Josie, I got a letter from Herb. Hoover today on this moatless-wheatless business and I wired him to count us in on it, so we don't have no beef, pork or mutton on Tuesdays and no wheat bread or biscuits on Wednesdays."

"You wired him, did you? Don't I git a say so on this? Who is this Herb. Hoover that he kin tell me what I'm to cook? I reckon I'm payin' fur the grub. I got to cook it and I don't stand fur no interference from strangers with my household duties."

Well folks it tuk me most of an hour to convince that woman that this was part of the war program and that it was our duty to help, but she finally give in by sayin':

"Well Tom you know how I feel about the war; I'm puffectly willin' to do my share even to givin' you up, if you'll only go to the front, but I know just how it'll be on them meatless days—you'll want chicken or Belgian hare, or some other fine meat, and then you'll go around braggin' how you're savin' some starvin' Belgian children; I know you."

I come right back at her with them hollerin' words:

"Woman, I reckon I kin be as patriotic as you kin, but don't give me chicken or rabbit stew. I want to help President Wilson make the world safe fur democracy, because I been votin' that ticket ever since I'm twenty-one and a finer Democrat never lived then Woodrow. No, we don't eat chicken with my consent. What we want to eat is oysters."

"Oysters!" she screamed. "Oysters! Of all things you pick the most expensive. How am I goin' to git oysters up here on the wrong side of Stove Prairie hill? Do you think the boys kin go down to the Poudre and fish them out?"

"Woman," I sez, "I wisht you'd read up on the war. Don't you know that we kin do our nation a great service and hamper the submarine menace by eatin' oysters?"

"You're crazy Tom," she sez.

"Ignoramus," sez I (under my breath) and then louder: "Don't you know that we're plannin' to starve the crews of them German submarines; that oysters is their staff of life and that the more oysters we eats the sooner they'll have to quit submarining?"

I reckon that was the argymint that fetched her, fur she didn't say nuthin' more, and the next Tuesday we had some fine scalped oysters. After dinner I sez to her that it was fine the way she fell in with mine and Hoover's ideas on winnin' the war by eatin' the grub away from the submarine sailors, but she jest grinned and showed me a tin can with a cove oyster label on it and sez:

"I reckon them oysters you ett was harvested long before Germany started her submarines out in the ocean."

What kin a feller do with a contrary critter like that? I'm goin' to cut this short, because I want you-all to read a letter I got from a Swedish friend up near Laramie, by name Sven Alexon. He called the turn about me bein' the same Putnam that was with The Southwest Trail. My, them was happy days; away from home all the time, nobody to bother me; no ranch work to do; travelin' on passes; meals in them railroad eatin' wagons all charged up to the company; sometimes ridin' in Cottrell's private car or in a Pullman coach, the porters tippin' their caps to me and me, vicy versey, tippin' the porters. That job like to ruint me fur hard work. I hain't never been able since to spit on my hands when I go to pick up the ax; it don't come naturel any more. I should-a been a plutocrat.

THOMAS JEFFERSON PUTNAM.

* * *

From a Swedish Admirer

Larmie, Wyo., Nov. 10, 1917.

Meester Yeff. Putnam,

Yediter on Wostern Farm Life,

Dere Yeff:—Ay spose ju forgot ma, how ju got fine yob riting yeditorials on farm papers an riding round med county agents taling dose dryfarmers how ha skal raising big crop an jusing lettle vater, but ay kno ju; ay bate ju ban same faller vat jused to riting letters on Soutvest Trail long tame ago. Das ban same paper vat Cottrell ban running von tame ven ha ban qvitting hes yob on Colorado.

Ay jused to live on Minnsota an had gude yob bay Yim Hill on relroad an ay got farm from hem. Yim ban gude land booster an done gude deal for farmers. Ay sold out an vent vest lake Horace Greeley sed. Ol' Horace ban gude land booster to, yust lake

Turn to Page 14

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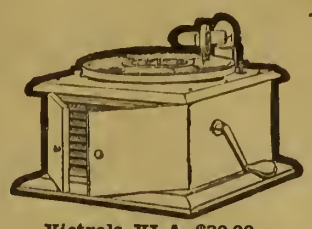

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IV. Crossing.

Opposed to inbreeding in its results is the practice known as crossing or crossbreeding. Inbreeding purifies the bloodlines of extreme variation, while crossing, by bringing in contrasting characters from a new blood line, furnishes new combinations of character and consequently wider opportunity for variation. The uniformity of a herd is at once destroyed by crossbreeding. Every once in a while some man thinks he can combine the good qualities of all the dairy breeds in one, by crossbreeding. Theoretically it can be done, but it is too long a process for one individual to undertake. With all the variety of selection for our needs that is offered by existing breeds, every man can find some breed suited to his conditions, and he will get farther by accepting as a foundation some breed that has already had a hundred or two years of intelligent effort expended upon it, than by putting a bull of one breed upon cows of another in an effort to best the game by a short cut.

Grading

Grading is the proven way of building up a commercial dairy herd. You must select with care the breed best suited to your conditions, then raise its grade by the use of bulls better than the cows. And it is self-evident that if advance is to be made, each bull used on the herd must be better than his predecessor. Since life at best is short, if you can shorten the process several years by spending more money on your bulls and getting bulls that produce heifers far better than their mothers, you are that much ahead.

Prepotency

For the building up of any herd, whether it be grade or purebred, no factor is of more importance than prepotency in the sire. By prepotency we mean the superior power of an animal in transmitting its characters to its offspring. Prepotency may exist either in the male or the female, but usually, because we select better bred males than females, we associate prepotency chiefly with the male. The chief difference is this: we have in our herds a considerable number of females. We select for retention for our own herds the best producers and breeders, and sell the poorer ones. Since we produce the bulk of the females for our own herds, we discover prepotency in our females, while we have to buy it in our males. And prepotency in a bull costs good hard cash, in a community where the value of a tried bull is recognized.

Here in the intermountain country there are so few tried bulls for sale, and shipping distances are so great when translated into express or freight charges, that we have nearly all fallen into the habit of buying calves for our herd sires. So fixed is this habit that we have become unreasoning concerning it and many men will refuse to consider an aged bull no matter what the price. I have noticed this so often in the sale of animals that one time I tried an experiment for my own amusement. I was thru with a Duroc Jersey boar who was sired by a grand champion boar at the Nebraska state fair, and whose dam was a winner at the same fair and was out of one of the most famous sows of the breed. This boar proved himself a remarkable sire in our herd, producing many show winners, among them the grand champion barrow at Denver. I showed the prospective purchaser this boar, his producing daughters in our herd, and his spring crop of pigs, all good. I then priced this boar, who was two years old and active, at $50, and priced a son of the boar, under a year old, at the same figure. The purchaser took the pig!

We must remember that there is no evidence of a bull's value equal to the evidence of his heifers. And the man who develops a bull unusually prepotent in producing desired characters has an asset that he should not value too lightly. Many a man owning purebred herds has come to the front as a breeder because of the progeny of a single sire, only to be relegated to the ranks of mediocre breeders when the bull died. If you must buy calves, at least have sense enough to keep them until their heifers are in milk, so that you may know whether they are worth keeping longer. I say this from sad experience of the same kind many another man has had.

ANSWERS TO INQUIRIES

No. 1. Is it true that the high records made by individual cows of various dairy breeds are often due to special course of feeding, not advisable under ordinary conditions?

Answer. Yes. The highest records have been made from cows under the care of expert herdsmen and feeders who know how to fatten the cows up with a quality of fat which will milk out during the testing period. This is especially true of short time records, seven and thirty-day records. Special feeding is also done for cows that make yearly records, and the cows sometimes are not bred so that they are not carrying a calf during the period of the milk record.

No. 2. Of what particular value are these sensational records to the man who wants to select animals to build up his dairy herd?

Answer. Any record in any line of performance is always made under stress; horse races, automobile races, athletic records, and so on. It is true that these records are beyond the ordinary, but nevertheless they are a criterion of what can be done. While the ordinary owner of dairy cows cannot make these records, nevertheless, when most of the leading breeders are making them, they furnish a comparison of the ability of cows of different blood lines to make extreme records. Presumably the bull from a 40-pound cow is worth more than the one from a 30-pound cow, when both have been forced to the limit of their production in order to make these records.

No. 3. Isn't too much emphasis being made on these record performances by all the breed associations?

Answer. I think not. Prior to the time of making official records a buyer was dependent upon his judgment of the individuality of an animal, and a statement of the milk record as given by the owner,—a man interested in exaggerating in order to make a good sale. Official records are made under the supervision of representatives of the State Experiment Station. In case cows make extremely high records, supervisors are changed during the course of the test so that there may be no question as to the honesty of the test. As a result the buyer may accept these official records without question, taking into consideration the fact that they are forced records. Some breeders making records do not force their cattle and the buyer, if he is aware of this fact, should take it into consideration. For example: a 26-pound record unforced is worth a 30 or 35-pound record under forced conditions.

No. 4. Isn't it a mistake to force butterfat and milk records in this way? Will it not result in constitutional weaknesses, the same as overtraining of the human athlete?

Answer. I believe the chief weakness developed in athletes, as a result of high training, is that they must keep up such training or rapidly deteriorate. So far as inheritance goes, the descendants of these athletes are not weakened because of the over-training of the athlete; neither are the descendants of a cow that has been ruined by too much forcing weakened on account of this. So far as we know the effect of environmental influences upon the individual during its lifetime is not inherited by the progeny, unless the influences are so far reaching as to disturb the whole physical system of the individual. The loss in extreme forcing of records is to the man who owns the cow, and not to the man who buys the bull calf from her.

No. 5. What course should I, as a dairy farmer wanting to build up his herd, adopt in selecting foundation stock of pure-breds? Shall I give preference to the offspring of high record animals, or had I better stick to some line of medium performance?

Answer. It is advisable to select from high record stock, provided you can buy it within your means. All the conditions under which the record is made, if they can be ascertained, should be considered when purchasing. Yearly records should be given preference over short term records. Both parents should be given weight in the choice. It is not advisable to buy a calf because he is from a noted sire, if the dam of the calf is untested. Both lines of the pedigree should have equal weight, although we usually lay more stress upon the sire's side because the number of calves from great sires is far larger than those from noted cows, and consequently we can buy richness of pedigree on the sire's side cheaper than on the dam's side. It costs money to buy a calf from a noted sire and out of an extremely high record dam. It costs less money to buy one from a very great sire, and out of a

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am with just a good record. In choosing sires it is necessary to get beyond the line of medium performance. If we stay by the mediocre there is no chance for advancement. Choosing a sire with high records in his pedigree gives the opportunity of building above the level of the cows in the herd.

Corn Substitutes for Hogs

A number of substitutes for corn in hog feeding with suggestions for their use are given below. The feeding value, methods of feeding, and the highest relative cost of a pound of each feed to a pound of corn at which profitable substitution can occur are given for each feed. For example: A pound of feed with a feeding value four-fifths that of corn must cost at least one-fifth less before substitution is profitable purely from a monetary standpoint.

Oats after crushing have three-fifths the feeding value of corn. They can be substituted profitably for corn, therefore, when a pound of crushed oats costs two-fifths less than a pound of corn. In a fattening ration, oats should not compose more than two-thirds of the ration during the early part of the feeding period and should gradually be reduced until, during the last four or five weeks, they are entirely omitted from the ration. Oats are excellent for adding bulk to a ration and are especially good for brood sows.

Barley when crushed is an excellent feed for swine and can be substituted entirely for corn, even when it costs the same per pound.

Rye when costing nine-tenths as much as corn per pound can be substituted for corn in the ration. It should be fed ground or crushed and is best fed as a slop.

Frosted wheat or wheat damaged in other ways and unfit for milling can be substituted, even when equal in cost to corn per pound. Wheat should be ground, crushed, or soaked.

Emmer or spelt is a bulky grain. It can be substituted for corn when costing three-tenths less per pound. A partial substitution is best. This feed should always be ground and is best when fed as a part of the ration along with concentrated heavy meals to give bulk to the ration. A combination of corn and emmer proves far superior to emmer alone.

The grain sorghums, kafir, milo, and sterita, may be substituted for corn when slightly lower in price per pound. They should be ground and fed as a meal.

Buckwheat can be substituted for corn when it costs one-tenth less per pound. It should be fed ground and is best as a partial substitute, for it tends to produce a poor quality of fat.

Millet can be substituted for corn when one-fourth cheaper per pound. Millet should be ground and fed, always with a rich protein supplement. For fattening hogs in cold weather it is not so good and produces a soft pork.

Cull beans can be substituted for corn if below the cost of corn. Beans make soft pork and always should be cooked and salted before feeding. It is better to substitute the beans for but one-half the corn and so prevent soft pork and increase the gains.

Wheat shorts or middlings are a by-product of the milling of wheat. While feed high in protein, it can be substituted for corn when one and one-tenth the cost of corn. It is best as a nitrogenous supplemental feed and when forming but a part of the ration. Owing to its heavy, pasty nature, if fed alone for a long while digestive troubles are liable to occur. No protein supplement is necessary for a ration of shorts, though lime, in which shorts are low, should be supplied.

Barley feed obtained in the manufacture of pearl barley and barley flour has about the same feeding value as a mixture of wheat bran and shorts and can be substituted for corn meal when costing the same. No protein supplement is needed. It is rather bulky and generally used as a protein supplement when usual prices exist.

Pea meal can be substituted for corn when costing one-twelfth more than corn. It needs no protein supplement, but, owing to its close nature, should be fed with a bulkier feed. It is best used as a partial substitute. A fine quality of pork is produced by pea meal.

Broom corn waste or the tops of broom corn can be fed profitably to hogs and have about the same feeding value as millet.

Weed seeds from grain elevators can be substituted for two-thirds of the corn in a ration. They should be ground and cooked before feeding.

When the prices of corn and of nitrogenous by-product feeds, such as bran, peanut meal, soy-bean meal, velvet bean meal, linseed oil meal, tankage, fish meal, etc., are relatively close, a larger amount of these concentrates high in feeding value can be fed and partially substituted for corn. This will naturally increase the percentage of protein in the ration.—U. S. Department of Agriculture.

Trees of the Semi-Arid Region

Continued from Page 6

tains, plant in the nursery row, and after a year or so sell to their customers. These can be bought at moderate prices balled for transportation.

The farmer may transplant his own trees from the mountains provided he is careful enough. The best time to do this is just before the new spring growth commences. A good deep trench should be dug around them when a spade may be introduced clear under the root, and the tree carefully lifted with a ball of earth and placed on burlap, which is then tied tightly to hold everything in place. When the tree is finally planted the burlap or gunny sack may be left on, as it soon rots and the roots penetrate such material very easily.

The art of successful transplanting lies in conserving sufficient moisture to carry the tree for a season even if that season should prove dry. In the dry orchards of California the young trees go from May to November without a drop of rain and more than 95 per cent come thru. In our own regions they do not have to stand so severe a test as this.

When the land is plowed deeply in the fall there will usually be sufficient moisture by April or May to carry the trees under the driest average conditions.

The holes should also be dug in the fall, for they may fill up several times with snow and slush which will sink down into the subsoil. While the trees are young they use very little moisture (since transpiration depends on the leaves which at this time are not numerous) and the precipitation actually supplies more than they can consume, the consequence being that the surplus is conserved in the subsoil by cultivation and provides an absolute insurance against drouth.

Anyway, the fish in the pasture creek ought to be thankful that Mr. Hoover did not say to eat more of them earlier in the season.

One way to increase poultry production is to banish the chicken mites from infested hen roosts.

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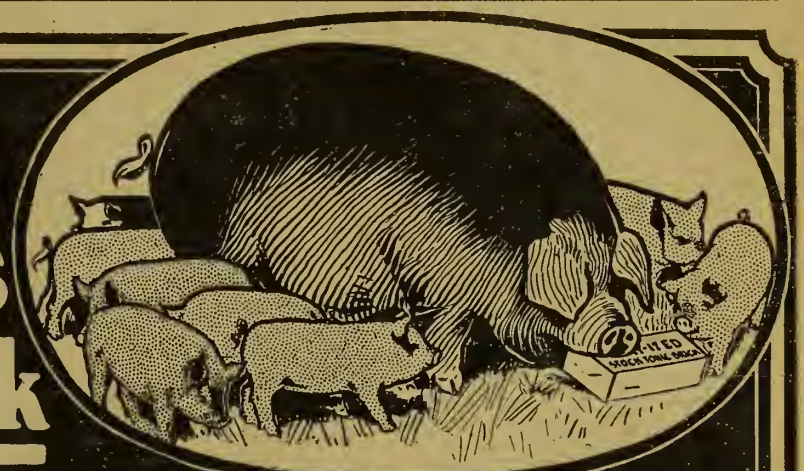

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It is a combination of choicest medicines approved by highest veterinary authorities, which animals need and crave every day. You don't have to force them to take it. Just place it in the open feed lot or boxes and they will help themselves whenever they need it—keep themselves in prime health without overdosing and without bother to you. Salts them regularly at the same time.

Carey-ized Stock Tonic Brick contains no worthless or harmful material. It is all pure health-promoting medicine. Composed of powdered gentian root, sulphate of iron, bicarbonate of soda, sulphur, carbonized peet, quassia, charcoal and pure dairy salt, compounded as carefully as a physician's prescription. Equally good for hogs, cows, sheep, horses and steers—they all need and enjoy it.

Don't lose valuable time. Order a dozen or more Carey-ized Stock Tonic Brick from your dealer at once. Let your animals have free access to it for 30 days. If not satisfied with the result, return what you have left and get all your money—no charge for what you have used in the test feed. If your dealer does not handle it, write us his name and we will see that you are supplied.

Save 15% to 25% of Your Feed Money

Carey-ized Stock Tonic Brick keeps stomach, liver, bowels and kidneys in good working order, destroys worms, purifies the blood, prevents fever, builds up a strong, disease-resisting system.

It aids digestion—enables hogs and other animals to take care of their feed properly and get the full benefit of what they eat. When fed to hogs it puts them on the market in better condition in less time, at a substantial saving in feed cost. Take advantage of our liberal 30-day trial offer. You have everything to gain and nothing to lose.

Write us for the names of users and full information. The coupon is for your convenience. Fill it out and mail it to us today.

CAREY SALT COMPANY Department 251 Hutchinson, Kansas

Please send me full information on Carey-ized Stock Tonic Brick and Book on "Making Live Stock Pay." (251)

I have hogs, cows, sheep, horses.

My dealer's name

P.O. State

My name

P.O. State

The Farm Home

MRS. H. T. FRENCH

Questions about home problems promptly answered by letter and thru the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

Most wholesome, heartening and second only to Christmas, Thanksgiving comes to us an altogether warranted holiday. Answering a human need, it has survived the meager festival of the Pilgrims on the "stern and rockbound coast" of Massachusetts and spread thruout a great nation; and who knows how soon it shall burst its bounds and fill a sad world with its praise and gratitude over new victories won!

Have a glad heart on Thanksgiving day and make other hearts glad. This is a privilege as well as a duty. Let it not be a day of doleful reminiscence. With due recognition to the past, don't forget that the love and good cheer that made the days gone by so bright, the faces we no longer see, the voices we no longer hear, are the more precious as they were brave and strong and cheery. Cultivate not a memory of groping despair. Song and story ring with merry holidays, and who can deny that "A merry heart doeth good like medicine."

The Pie of Thanks

By Perrine Lambert

Folks kin sing about de turkey
A-roastin' in de pan;
Dey can talk about its flavor
En say, "It's somethin' gran'."
But if yo' want to draw from me
A mos' contented sigh,
Jes tell me dat yo' gwine to hab
A spicy pumpkin pie.

De sweet potatoes sho' am fine
Wif lots ob butter on;
An' when I see cranberry sauce
I'se glad dat I was born.

I knows I can't eat everything;
It ain't no use to try,
An' so I saves ma appetite
Fo' spicy pumpkin pie.

I sho' enjoy dis day of thanks,
When folks an' childrens eat.
It jes' make de whole world joyful,
An' life am so complete.
When dinner time comes rollin' round
With leapin' heart I spy
A-sittin' right in front ob me
Dat spicy pumpkin pie.

Woman's Section of the Farmer's Congress

So few of our splendid rural clubs sent delegates to the Farmers' Congress a year ago, not because of lack of interest in their respective localities, but because they did not realize the value of the bringing together for the purpose of successful co-operation the best from all localities that there might result a mighty influence for progress along all lines of work and conservation.

Conservation of time, energy and money, and better living in these days of crises, one after another should be the one thing that should stimulate our efforts in the promotion of the greatest conferences in our respective states that has ever been known. This year as never in the history of our country every woman is anxious to do her bit to help her home, her county and her state; and as the federal government has recognized the great need of conservation during the war period and has made available funds which will place county home demonstrators in many of the counties, let us become alive to the opportunities and place ourselves in a position to receive suggestions from these demonstrators in order that we may carry out the work most efficiently. Write to the extension department of your agricultural college for suggestions as to how to proceed in your own county. Mr. Hoover says to the American women, "The final success of the war in which we are engaged may and probably does depend upon the ability to produce more food, and upon our thrift and self-sacrifice in conserving food products."

With the "home card" in your kitchen and the pledge card in the window let every housewife feel that she has enlisted in a great cause for freedom and progress, and with the faith of our grandmothers let us face these problems with the assurance of success and future thanksgiving in a freer land for our children.

Did YOU Sign the Pledge?

When asked to sign the food conservation pledge did you wish an answer to some puzzling questions?

The editor of these columns asked Miss Campbell, the woman county demonstrator of Denver county, her experience during the first few days of her campaign and the following answers were given:

"In signing this pledge you are not promising to decrease your use of any kind of food stuff, you are merely promising to the government that you will do the best you can in your circumstances.

"Illustration: You take a family using little meat; they probably cannot reduce the meat consumption 25 per cent.

"What can we use for wheat? Answer: Corn, emmer, feterita, kafir, milo. These are sorghum grains grown in Colorado and used for feedstuffs here. In Oklahoma and Kansas they are used for human food. I would also add oats. Decrease your wheat foods and substitute starchy foods.

"Substitutes for butter? Oleomargarine, oil, maizola, cottonseed oil and its products, meat drippings, and chicken fat.

"Substitutes for sugar? All syrups, dried fruits, honey. Eliminate pastries, frosted cakes and candies.

"Substitutes for meats? Nuts, cereals except wheat, dried peas and beans, and cheese (American and cottage).

"Use all sour milk and skim milk, except for children; they need the butterfat which the skim milk does not contain, therefore the adults can afford to reduce their total fat consumption. From the standpoint of cost, some say they can't afford the substitutes. The substitutes for meat are more expensive than meat, the substitutes for sugar are more expensive than sugar. The substitutes for wheat are more expensive than wheat, but it is for those individuals who can afford to use those more expensive things to save the other things for those who cannot afford them."

PATTERN DEPARTMENT

All Patterns 15c each. Address WESTERN FARM LIFE Pattern Department, 14th and Arapahoe, Denver, Colo.

2199 Charming Negligee. Cut in sizes small, 32-34; medium, 36-38; large, 40-42, and extra large, 44-46. Requires 7½ yards 36-inch material for medium size. This model in rose crepe, white or blue batiste, in figured crepe or China silk, will be very attractive. It is also nice for cashmere, flannelette, percale, lawn, dimity and dotted Swiss.

2224—Popular Model. Cut in sizes 34, 36, 38, 40, 42 and 44 inches bust measure. Requires 6 yards 44-inch material for 36-inch size. This model is cut on Moyenage lines and has smart, inserted pockets at the sides. The waist fronts are finished in surplice style. The sleeve has a deep, shaped cuff. Serge, Jersey cloth, mixed and plaid suitings, voile, broadcloth, satin and velvet, are nice for this model.

2200—Good Dress for School or General Wear. Cut in sizes 4, 6, 8, 10 and 12 years. Requires 3⅝ yards 36-inch material for 8-year size. This style is smart for gingham, percale, lawn, chambray, serge, poplin and voile, also for velvet, corduroy and linen. It is nice, too, for combinations of material. The fronts are lapped at the closing and the neck is finished with a deep collar, forming revers over the front.

2198—Jaunty Dress. Cut in sizes 6, 8, 10, 12 and 14 years. Requires 4¾ yards 36-inch material for 10-year size. This is nice for plaid or checked gingham, with chambray or linene for pockets, collar and cuffs. The belt is slipped through openings in the pocket straps.

2216—Simple, Popular Model. Cut in sizes 14, 16, 18 and 20 years. Requires 6⅜ yards 44-inch material for 16-year size. Jersey cloth serge, satin, silk, checked or plaid suiting, linen and other wash fabrics are nice for this style.

2217—Waist, cut in sizes 34, 36, 38, 40, 42 and 44 inches bust measure. **2218—Skirt,** cut in sizes 22, 24, 26, 28, 30 and 32 inches waist measure. Satin, velvet, serge, mixed suiting checks, plaids or Jersey cloth could be used for this model. The waist has the new cap shoulder to which the sleeve is joined. The skirt has smart, attractive lines. This illustration calls for two separate patterns at 15c each.

2206—Pretty and Practical Set. Cut in sizes 1, 2, 3 and 4 years. Requires 2½ yards 36-inch material for dress, 1½ yards for slip and 1⅛ yards for drawers. This comprises a little yoke dress, suitable for wash or woolen goods, a petticoat slip, nice for lawn, cambric, flannel or flannelette, and comfortable drawers that may be made of muslin, longcloth or canton flannel.

2212—Ever Popular Model. Cut in sizes 8, 10, 12 and 14 years. Requires 3½ yards 44-inch material for size 12. Khaki cloth, serge, cheviot, mixed suiting, linene, drill, gingham, voile, repp and poplin are nice for this model. The skirt is a five-gore model. The blouse may have short or long sleeves.

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Profitable Farm Poultry

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Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries Poultry Department, Western Farm Life, Denver, Colorado.

Duck Raising in the West

W. M. Jones

To say that duck raising is now in Colorado is an actual fact. Even in the East it is new; but farsighted poultrymen seeing a good future demand for table ducks, and knowing how cheaply they could be produced, took upon themselves the task of raising and creating a market for thousands of ducks yearly. Their product was something good and they knew it, and in order to supply a fast growing trade, developed their strain until now their ducklings are a class much in demand, being weighty and juicy, and in quality and size so far beyond the ordinary farm ducks that there is no comparison.

The duck industry in the West needs an impetus. Someone, or perhaps I should say hundreds, should get behind the business. Cost of development of strain should not stand in the way of the breeder. There are several factors that have a tendency to discourage the duck raising industry in Colorado and the Rocky Mountain region. Chief among them is the dry climate and lack of natural running water. But this is by no means detrimental to the business, the truth of the matter being that water for the ducks to swim in is not essential. Ducks enjoy water, to be sure, and they like to dive for worms and tender roots. It is natural for them to do this.

So long, however, as they are supplied with plenty of drinking water and occasionally enough in a trough to wash themselves, they can be kept in a healthy and active condition and will do well, providing clean and dry shelter is maintained. Money spent for the construction of lakes, or a premium paid for land bordering on water, is practically wasted.

Some of the most successful duck farms are situated entirely away from any water, and the managers of such farms, as well as of other farms on which water is located, claim that larger and better ducks can be raised and more profit realized when no water is given the growing stock to swim in. This statement may seem strange, but it is nevertheless true. The writer has seen just as large ducks raised on dry land as were ever raised where water was continually supplied. Whether other conditions were partly responsible for this cannot be said.

So far as climate is concerned, those contemplating duck raising need not worry. Our climate, tho very dry, is ideal. The air is fresh, pure and wholesome, the spring weather mild, being conducive to rapid growth, while the summers are free from those depressing hot days and evenings that are common in the East. In no other state are the summer evenings so cool and helpful to growth as in Colorado. Other states, tho seemingly fitted for aquatic birds, have great disadvantages. Duck raisers in the East recognize this and are sometimes compelled to stop hatching early in the season or face severe loss on account of the heat, which affects the young ducklings.

The vastness of this western country is another factor that has had considerable to do in preventing commercial duck raising. In order to take advantage of the excellent grazing land and rich pastures and fields, as well as to find a most profitable way to dispose of the surplus of hay and grain grown, farmers and ranchmen have given most of their attention to the raising of cattle and other livestock. Their work yielded splendid returns and it was a good course to pursue, considering the amount of free pasture and cheap land available; but now, however, as property values jump and as the increasing population is demanding new article of food, other and newer farmers are taking up different lines, such as poultry raising, because they find it more profitable and can get better results on smaller farms.

Extensive poultry raising has only been tried on a short time in Colorado and at present home producers are unable to supply the demand. A great portion of what the Denver market consumes comes from states bordering us on the east. While this cannot be said to be the truth about the demand for ducks, it nevertheless indicates that Denver as a good market for poultry and eggs ought to be just as good a market for ducks when the people come to know what ducks are.

Denver is a poor market for ducks, but the same was once true of Boston, New York and Philadelphia. This, as indicated above, is because people do not know what good ducks are and farmers do not know how to raise them. Few seem to be aware that they are a very delicious table fowl. This alone holds the industry down. Then again there are thousands of wild ducks brought into the city each year and these ducks are distributed among friends of the sportsmen, leaving a very lasting memory of what they are.

The same effect is made by marketing the common puddle ducks that are on most farms. Once a year the surplus stock is sold. Generally they are old and tough, as they always are after they become several months old. They lack that white, juicy meat and the sweetness and delicate tenderness of real good market fowls.

To command the highest price ducks must be in prime condition. They must be from a well developed strain, properly fed and fattened, so that when put on the market their flesh will be juicy and tender. Marketing is most profitably done at the age of six to twelve weeks. By that time they will have gained a maximum amount of growth at a minimum expense and it is questionable if they will grow much after that until laying time. Personally I do not think it wise to keep ducks a day over ten weeks.

As ducks become older they become hard-boned. Up until twelve weeks they are soft-boned generally, altho some might be hard-boned. A hard-boned fowl, readily told by feeling of the breast and neck, indicates age, and it is not nearly so good as it was before it got to this stage.

It is indeed too bad that more attention is not given to this industry, but for some reason people do not understand the business and do not learn. It is, I suppose, the same with merchants. The commission men and the packers who employ duck experts from the East are people actually and thoroly familiar with it, but they are not in business to build up a home industry. Their products are in good demand everywhere and ducks bought in this section, if not sold at once, are put in storage for future use. Ducks raised in Colorado are shipped to Kansas City, Chicago and Philadelphia, and it is nearly always the case that the good grade leaves the state while the poor grade stays to be put upon the home market.

There is no question in the world about the producer finding a ready market for his ducks thru the commission men and packers of Denver, and at a fair price. I wish to emphasize this point, that Denver can be made just as good a market for ducks as it now is for chickens, and it does not seem to me that farmers or poultrymen can afford to raise ducks for export until consumers here are educated to conserve a large portion of all raised. It is up to some energetic and business-like farmer to get behind the great duck raising industry, show the people the superiority of Pekin ducks over common puddle or game ducks, and push his business right along. It can be done cheaply and profitably, since all feed can be raised right at home.

WONDERFUL EGG PRODUCER

Any poultry raiser can easily double his profits by doubling the egg production of his hens. A scientific tonic has been discovered that vitalizes the flock and makes hens work all the time. The tonic is called "More Eggs." Give your hens a few cents' worth of "More Eggs" and you will be amazed and delighted with results. A dollar's worth of "More Eggs" will double this year's production of eggs, so if you wish to try this great profit-maker, write E. J. Reefer, Poultry Expert, 4248 Reefer Bldg., Kansas City, Mo., who will send you a season's supply of "More Eggs" Tonic for $1.00 (prepaid). So confident is Mr. Reefer of the results that a million-dollar bank guarantees if you are not absolutely satisfied your dollar will be returned on request and the "More Eggs" costs you nothing. Send a dollar today, or ask Mr. Reefer for his free poultry book that tells the experience of a man who has made a fortune out of poultry.—Advt.

Lice, Mites and Bedbugs

Can you tell me what breeds bedbugs in a chicken house. and what will kill chicken lice and bedbugs and mites in a chicken house?—A. H., Boulder, Colo.

Any of the coal tar products, such as zenoleum, creolin, etc., will destroy bedbugs and mites which lodge in the poultry houses. Bear in mind, however, that the solution must touch the bugs to do a thoro job. Either remove all the roosts and fixtures from the house or be absolutely certain, if the remedy is applied in the house, that it enters every crack and crevice. Both mites and bedbugs hide during the day and usually work during the night, so the daytime is the best time to get them. The ordinary hand spray pump is usually not sufficient to do a thoro job, so it is better to remove roosts and nests and treat them thoroly before replacing. In extreme cases the poultry house walls may be infested with mites, so be sure that the liquid is sprayed everywhere. Hot whitewash is just as effective as the other preparations. Even coal oil with 5 per cent of carbolic acid added is effective.

Turkey Is Sick

Could you please tell me what is the matter with my turkey gobbler? He acts something like cholera; seems to be filled with water in his breast and wants to stand in water. Top of head is purple and he stretches his neck out like he was choked.—Mrs. W. I. S., Kit Carson County.

Under separate cover we are sending you a government bulletin on turkey raising, which may help you to determine the trouble you are having with your turkeys. Your gobbler shows some of the symptoms of cholera, but cholera is not a common disease in Colorado. By all means, isolate any sick ones. Cut down the feed for a day or two and look carefully for lice on the bodies. If more turkeys become sick, write to the Veterinary Department of the State Agricultural College at Fort Collins, asking for directions as to how to ship a case. They will be glad to examine such cases and will charge you nothing for their services.

Three Poultry Questions

1. Where can I get all kinds of poultry feed most economically? Please tell me some good grain dealers in Denver.

2. Do you think commercially mixed feeds as good as home made?

3. Can I add more chicks (250) from the second hatch to a hatch from the first incubation, which has been brooding in a large colony brooder? That is—the colony brooder has been used from the 15th of last month (August) with 220 chicks, but I expect about 250 more chicks at the 10th of September, and the brooder has capacity of 1,000 chicks (newly hatched). Now, can I add these 250 chicks to 200 former chicks in the same brooder without any possible danger to either? If so, please show me how to do it.—G. T. N., Santa Rita, N. M.

1. The most economical way of buying poultry feed is to buy at harvest time of the grower. In every case during the past ten years we have saved from 25 to 150 per cent by buying our year's supply of wheat at threshing time. Ady & Crowe Mercantile company and the Barteldes Seed company, Denver, Colo., could probably supply you with all kinds of feed.

2. To say the least, home mixed feeds are as good, and perhaps as a general thing are better than commercial feeds. There is no need of paying someone else to do something we can better do ourselves. Commercial feeds, especially feeds for young chicks, contain a considerable amount of seeds which will not be eaten by the chicks, also grit which may be furnished at a lesser price than the price of grain.

3. We usually handle two or three ages of chicks in one brooder, but have never done so in such large numbers as you mention. Would advise that you put the heat up very high when the new chicks are added in the brooder. This will enable the younger ones to keep sufficiently warm, while the older ones can stay away as far as they wish. I believe chilling causes a greater loss among baby chicks than everything else put together.

MORE EGGS

while prices are high. Hens usually loaf at this season. They must have more than feed if you want more eggs *now*.

Dr. LeGear's Poultry Powder

is a tonic which stimulates the hen's whole system, and puts her in condition to lay. It also corrects and prevents disease, and keeps poultry healthy. It is my own formula from 26 years' veterinary and poultry experience. Try it *at my risk*. If it doesn't do all I claim, your dealer will refund your money.

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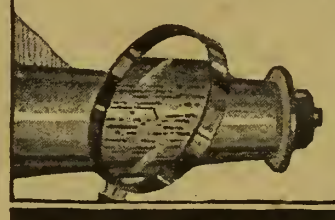

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Baked Pinto Beans

A delicious dish of baked beans may be made by using pinto beans as follows: Soak two cupfuls over night, and in the morning add one-half teaspoonful of soda and enough fresh water to cover them, and put them over the fire. As soon as they come to a boil, drain and pour cold water over them, rinsing thoroly. This gives them a firmness which keeps them from getting mushy. Lay a thin slice of salt pork in the bottom of the pan. Add a small chopped onion to the beans, and pour all into a pan or baking dish with the slice of pork or bacon at the bottom. Take a few more slices of pork or bacon and press them down into the beans. Add a little salt, a pinch of ground mustard, and a tablespoonful of molasses. Cover with water, set in a slow oven, and bake six to eight hours. As the water boils away, add more, being sure it is always boiling, as the addition of cold water will retard the cooking. They will be a beautiful brown when cooked and moist and tender.

The Grange

In addition to State Master John Morris, who has been serving on the Colorado Council of Defense for some time, the Grange is now represented also on the publicity committee of the council, thru State Lecturer C. W. Swayze. Chairman L. G. Carpenter of the publicity committee gave Mr. Swayze notice of appointment in the following letter:

C. W. Swayze,
Lecturer of the State Grange,
Denver.

Dear Mr. Swayze: I would like to ask you—and with the cordial approval of the governor—to become a member of the publicity committee of the State Council of Defense.

The Grange, with which I have been acquainted for over 40 years, has always had a broad conception of citizenship. Its lessons have always helped to develop and sustain the highest character of public service. I feel that your work on this committee is a patriotic opportunity for you and for the organization, and will be of great help to the committee.

Respectfully yours,
L. G. CARPENTER,
Chairman of the Publicity Committee of the State Council of Defense.

Mr. Swayze has accepted the appointment and he addresses the following to all members of the Grange:

Worthy Patrons: I consider it a privilege to help spread the spirit of greater patrotism and self-sacrifice. Nobody doubts the patriotism of the Grange or the farmer. But what we must do at our Grange meetings is to impress upon the minds of our members the seriousness of the situation, have patriotic meetings and discuss how we can do more. "There is noth'ng in all the world now worthy of thot except winning the war."

We are fighting this war because Germany made war on us. Whenever there is a Liberty loan, food conservation or any other kind of a campaign, let us make it the feature of our lecture hour. I will send to all the lecturers all the printed matter obtainable as far in advance of these campaigns as possible, and hope that each lecturer will consider it his duty to distribute it to the ones assigned the different subjects. Every patron should read about and understand the war and be prepared to oppose all peace talk until peace means the end of all war. Today the nation is in peril. Everybody is called to service. Do your part.

Fraternally yours,
C. W. SWAYZE, State Lecturer.

St. Vrain Grange raised $600 for the soldiers' library fund. This money is to be used in building and equipping libraries at the various military training camps.

The next session of Darden Pomona will be held at Maple Grove Grange hall, Saturday, Dec. 31. A good program is promised.

The receipt of the following donations to help defray the expenses of sending the Maple Grove drill team to the National Grange session at St. Louis Nov. 14 to 23 is gratefully acknowledged: Maple Grove, $50; Darden Pomona, $20; Clear Creek Valley, $15; Happy Valley, $10.50; Crescent, $10; Central Valley, $10; Henderson, $10; Columbine, $10; Pleasant Park, $10; Sunflower, $10; Bear Creek Valley, $10; Lakewood, $10; Unity, $10; Running Creek, $10; Lock Lomond, $10; Wheatridge, $10; Harmony, $10; Rose Hill, $7; Elk Creek, $5; Prairie Gem, $5; Pine River, $5; Pleasant View, $5; Florida, $5; Pleasant Valley, $5; Enterprise, $5; Golden Rule, $5; Genesee, $5; Bijou Valley, $5; Riverdale, $5; Green Valley, $5; Montrose, $5; Altona, $5; Fountain Valley, $5; Valley View, $3; Rocky Mountain, $2.50; Mt. Alescon, $2.50; Grand View, $2.50; Prairie View, $1.50.

Comment by Farmer Putnam

Continued from Page 9

das man Greeley on Dakota Farmer. Ay tank ju kno hem alrite. Ay ban coming up har on Lar'mie an got yob riting on Boomrang yust lake Bil Nye jused to do but et don't pay. Ay got farm now on Lar'mie Plains an et ban alrite. Ay got tracter an gas enyine to do ma work so ay got tame to rite letter to ju an monkey round gude deal. Ma farm ban bout ten miles bahind Lar'mie but ay got plenty tame to go on town an ma boy Ole ban going up har on das Cow College. Ay tank ha skal lern to ba county agent. Ma voman skal lake to move on town but ay ban fraid sha git to high toned. Sha ban perty fast enyvay. Sha got Ford, an last veek sha bot player piano. Ay tole her sha aint got tame to take lessons, an her hands ban to stiff to play. But sha ban up to date alrite, an got von to play med her feet. Et only took her bout tan minutes to lern et.

Ay ban on Denver last summer an et ban perty dry plase. Das hole state ban so dry et skal lake to take vater from Lar'mie River so Wyoming can't git et. Wyoming got plenty vater an booze to, but dose probishun fallers ban vorking perty hard an probly dis state vil go dry to. Ay tank Wyoming ban gude lake some fallers en var. Ha dont lake to enlist but perty soon ha ban drafted so ha got to go enyhow. Ay tank Wyoming got plenty oil an don't need eny booze.

Ay vent back to Minnsota last veek to see ma ol' plase an das big State fair. Ay tale ju das fair ban big show an ay ban stuck on dose tracter enyines vat ay seen. Ay didn't kno et ban so meny tracters on hole Junited States, but ay seen so meny ay didn't kno vich von ay lake best. Ay seen big an lettle vons an vheels to an four. Ay seen funny von med von vheel going head an von going back at same tame; der faller sed et can turn square corner. Von enyine ban called steel mule an et ban funny yigger to. Ay bate ju et can vork yust lake mule an balk yust lake mule to. Ay skal lake to try et vonce.

Gude meny enyines ban burning karseen now, et ban cheaper an vorks perty gude. Ay asked von faller vat makes et go an ha sed et ban carbuncle vat enyine got on et. Ay don't kno vat et is but der faller sed et ban gude deal lake chicken gizzard, only et ain't got some stones en. Das air an karseen ban al chewed up en das carbuncle an makes gas. Ay don't kno much bout et but et goes alrite. Ay skal ask ma boy Ole bout et ven ha comes home. Probly ha can tale ma, ha ban perty smart kid.

Ay tank ju got perty good snap chumming round med big fallers lake 'Lias Ammons an Lou Sweet. Ay skal lake to do et but ay ain't smart nuff. Ay ban taling Ole das vat yedication can do for faller an ha skal git plenty. Ay skal tale ju maybe next tame vat Ole ban lerning up har on Cow College.

Gude Baye,
SVEN ALEXON,
10 miles bahind Lar'mie.

World's Cattle Shortage Thirty Million Head

Continued from Page 4

The average for the three-year period before the war compared with our exports for one year ending June 30, 1917, shows that our butter exports have increased six times and that our cheese exports have increased seventeen times. Anyone who will examine these figures closely and give them serious thought will certainly be convinced of the effect that these increasingly heavy exports are going to have on the demand and therefore the price of dairy products.

Neither should there be any alarm about the demand in the more distant future. England, France and Germany are sacrificing their herds to supply the immediate necessity for meat. It is reported that the loss of dairy cows in the United Kingdom is already over 1,500,000; in Germany over 450,000, and that Holland will be forced to slaughter more than 500,000 of her dairy animals.

It is probable that the world's shortage of cattle has already reached the 30,000,000 mark.

It should be remembered that the average production of dairy cows in these European countries is at least twice as much as the average production in our own country, so that it really takes approximately two of our cows to produce as much as one of theirs. Since two years are required to raise a cow to producing age and five years to bring her to maturity, it is certain that our foreign demand for dairy products would continue for several years even if the war were to close immediately. Furthermore, the depletion of these herds will call not only for dairy products but for breeding stock as well, and it may yet fall largely to the lot of the American farmer to supply both of these demands.

On account of her efficiency and economy of production the dairy cow will be called upon more and more as the war continues. The milk produced by a fairly good cow contains food nutrients equal to more than twice the nutrients produced by a well-fed steer in the same length of time and she will do it on a ration consisting almost entirely of roughage and by-products. In addition, she will produce a calf every year.

Fat, the class of food that is the most needed for army use, can be supplied to the best advantage by the dairy cow. A cow will produce in one year milk containing fat just about equal in quantity to the total fat in the carcass of a 1,200-pound steer, and she will continue to do it year after year. After the fat is taken away her skim milk and buttermilk, if made into cottage cheese, will furnish nutrients equivalent to the total nutrients in the carcasses of more than two 1,200-pound steers. One pound of cottage cheese is just about equivalent in food value to one pound of meat, and one hundred pounds of skim milk should make fifteen pounds of cottage cheese of good quality.

The annual product of a fairly good cow manufactured into American cheese would yield from 600 to 700 pounds, and each pound of American cheese is about equivalent in food value to two pounds of meat.

It is evident that the opportunity that lies before the cow for furnishing food for the world can hardly be equaled or even approached by any other farm animal, and the man who will stay by her and give her a chance will in the end be well repaid indeed.

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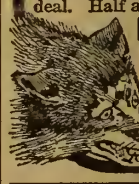
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WANTED—TO HEAR FROM OWNER OF farm or unimproved land for sale. O. K. Bawley, Baldwin, Wis.

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IRRIGATED FARM FOR SALE—225 ACRES, five miles from Denver Stockyards, one mile from railroad station. First-class water right; excellent improvements; liberal terms. J. D. Fitch, 525 Cooper bldg., Denver.

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"WEST LOUISIANA, EAST TEXAS AND THE Gulf Coast," just published by the Kansas City Southern Railway, contains a full description of the country from Shreveport, La., south to the Gulf of Mexico, its mineral, forest and agricultural resources, cities and towns, sent free. Write for copy to Immigration Bureau, No. 536 K C. S. Bldg., Kansas City, Mo.

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FOR SALE — 3 REGISTERED HEREFORD bulls, 14, 15 and 17 months old; Fairfax strain; fine individuals; none better. Shadeland Ranch, Eastonville, Colo.

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REGISTERED PERCHERON STALLION — Woodrow Wilson No. 100766, 5 years old, weight 1,800 lbs. Broke to work and easy to handle. Colts to show. Besigue Brilliant Coco breeding. Price $750. Geo. Cowing, Box 101, Elbert, Colo.

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POULTRY

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QUALITY DARK CORNISH, THE IDEAL FARM fowl W. W. Officer, Fowler, Colo.

FOR SALE—GOLDEN WYANDOTTE STOCK. Frank Gould, Opolis, Kas.

BOURBON RED TURKEYS, $3 TO $5 EACH; Muscovy ducks, great dry land ducks, pair, $2.50. H. Glitzke, Tonganoxie, Kans.

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A FINE LOT OF VIGOROUS, EGG-BRED S. C. W. Leghorn cockerels for sale. They will improve your flock. Rowley Egg Farms Co., Palisade, Colo.

QUALITY DARK CORNISH, AT NEBRASKA State Fair last month, won: 1st and 2nd cockerel, 1st and 2nd pullet, 1st and 2nd young pen and 1st old pen. Have a few choice cockerels to spare at $3.00 and $5.00 each. R. H. Jandehenr, Alma, Nebraska.

HELP WANTED

FARMERS—MEN, WOMEN, 18 OR OVER. Become U. S. Government clerks, $100 month. Easy, pleasant work; 30 days vacations with pay. List positions open free. Write Franklin Institute, Dept. J 177, Rochester, N. Y.

WANTED—RENTER FOR 320-ACRE FARM; 120 A. cleared; farm equipment complete, including tractor; 12 miles west of Lyford, Tex.; must be good livestock man, experienced in dry farming methods and irrigation. Write James Ross, 4613 Dover St., Chicago, Ill.

MISCELLANEOUS

WHITE SWEET CLOVER SEED, REASONABLE. John Lewis (farmer), Madison, Kans.

RAW FURS WANTED—DON'T SHIP YOUR wool, poultry, hides or furs of any kind until you get our price list. Perry Brothers, Weldona, Colo.

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KODAKS, CAMERAS, PHOTO SUPPLIES—Fords, the best kodak store, 1029 16th St., opp. old P. O., Denver, Colo., for Eastman Kodaks, all makes cameras, films, photo supplies; develop any size roll films, 10c; print pictures, 3c each and up; mail orders solicited; kodak and camera catalog mailed free upon request. Mention this paper.

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LUMBER, POSTS, MILLWORK, WHOLESALE prices. Inspect before paying. Buy now. Prices advance December 1st. Quick, freight prepaid estimates on your carpenter's bill of material. Price lists, catalog free. Keystone Lumber Co., Tacoma, Wash.

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BUY TREES FOR YOUR ORCHARD OR GROVE and have two and three years to pay at the same time. All stock that fails to grow replaced free. Address Weldon Valley Adv. Co., Weldona, Colo.

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National Western Stock Show

Preparations for the annual National Western Stock show at Denver are being pushed vigorously and there are indications that it will be the most important event held in the West this winter. That it will have an important bearing upon the war food situation is evidenced by the interest being taken by the government. The United States Experiment station and the Agricultural college at Fort Collins are planning a big educational exhibit, and there will be a large attendance of government experts to take up various livestock problems directly with the farmers and stockmen.

The date of the show is the week of January 19 to 26, inclusive. The show will start on Saturday with a students' judging contest in which the principal agricultural colleges of the West will take part.

The railroads are planning the usual low rates from all parts of the West and a very large attendance is expected. Plans are being made for a big livestock conference during Stock Show week, at which representative stockmen from all parts of the West will meet and confer with Mr. Hoover.

Many New County Agents

The latest developments for county agent work in Colorado are as follows:

Earl B. Darrow, formerly of the Dairy commission, is located in Prowers county. C. S. Anderson, formerly of the Animal Husbandry department of the college, goes to Saguache county and begins work at once. Walter A. Groom, who graduated at the college in 1915 and has since been with the Great Western Sugar company, takes up work in Arapahoe county. Floyd C. Tripp has reported for work in Jefferson county. Oliver J. Grace, who has been doing county agent work in Washington county, found that he could not satisfactorily handle the work and experiment station work too, consequently arrangements have been made for the employment of an agent in Washington county on full time. Walter J. Ott, a graduate of the Kansas Agricultural college and for the past year manager of the McClenahan farm near Greeley, has been employed to work in Washington county. Scott Wisner has recently been appointed for Lincoln county. Other counties are lining up about as fast as men can be secured for them. Indications are that there will be 29 or 30 counties employing county agricultural agents by the first of the year. H. C. Nevius, formerly of the State Dairy commission, has been appointed county agricultural agent in Montrose county and will begin work in early November. Clark Alford, who had been appointed for work in Lincoln county, found it necessary to give up the work because of being called in the army draft.

The best flagpole American farmers can erect is the silo. But why not put up a flag?

OVER 3,000 PERCHERON SALES

These transfers of sale were made on the Percheron Stud Book alone in the four months ending March 1st, 1917

Does This Mean Anything to You?

It should prove beyond a doubt that farmers everywhere are fast seeing the possible profit in raising better stock and are anxious to secure the seed for a foundation in Pure Bred Sires and Dams.

Big Drafters Command the Highest Prices Ever Known to the Trade

Horses are and always will be as necessary as plows. Get in the game NOW and reap your harvest from good seed.

Write us today your desires. We will be glad to correspond with you.

Our horses won 42 First and 14 Grand Champion prizes in Colorado and Wyoming in 1917 show season just closed.

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Animal Husbandry Department
COLORADO AGRICULTURAL COLLEGE
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Have a couple of March boars, sired by a son of Grand Model and out of a daughter of Model Critic, that are extra good. The price, $50, will be raised Dec. 1st.

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Shorthorn and Polled Durham Cattle
Valentine's Last, X12316; 452005 at head of beef herd. Claywood White, 427350 at head of milk type.
STATE INDUSTRIAL SCHOOL
Golden, Colorado

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MAY AND JUNE FARROW
The big, long, prolific kind, sired by Colorado Golden Model and Colorado Good E Nuff. Can furnish pairs not related.
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I have the largest 6-year-old jack west of the Missouri River for sale. Other bargains in Mammoth jacks and jennets.
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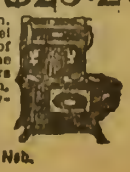

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We could tell you that the Amberola reproduces songs so naturally that, when you turn your back and close your eyes, it is difficult to believe that the living artists are not actually in the room. We could write whole pages in an effort to convince you that the New Edison Diamond Amberola is a musical instrument indispensable in your home, but one note of the voice of Anna Case singing "Annie Laurie," or one ripple of music from the bow of Albert Spalding playing "My Old Kentucky Home," would convince you as no printed words ever could.

We could tell you that the New Edison Diamond Amberola has a GENUINE DIAMOND REPRODUCER (no needles to change). We could tell you that Edison Blue Amberol Records are almost unbreakable and unwearable. We could tell you many other wonderful things about the New Edison Diamond Amberola and Edison Blue Amberol Records, but the Amberola itself can tell you in its own music language far better than we can.

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Mr. Edison has so perfected the art of phonographic recording that every sound-wave, from the crashing thunder of great military bands to the most delicate wisp of sound from the lightest-toned violin, is caught by his recording instruments and reproduced on Blue Amberol Records. His method of recording is a secret with Mr. Edison and his most trusted associates. That is why no record but an Edison record has all the natural warmth, richness and feeling of the living artist. There is no thin, metallic twang such as you hear from talking machines—nothing but smooth, round, rich and mellow melody. You actually would be astounded to think that anything but a human being could produce such music.

Mr. Edison, placing quality before all else, selects his artists solely on merit. He has the choice of the best vocalists and instrumentalists of the world make records for him. That is why, on Edison Blue Amberol Records, you hear the foremost singers, instrumentalists, bands, orchestras, etc., of the day. As illustrating what you may have when you own an Amberola we have selected at random the following Blue Amberol Records from the extensive Blue Amberol catalog:

HEART-SONGS

Annie Laurie
Ben Bolt
Juanita
Kathleen Mavourneen
Last Rose of Summer
Old Folks at Home

SACRED SELECTIONS

Abide With Me
Beyond the Smiling and the Weeping
Crossing the Bar
Glory Song
I Love to Tell the Story
Dreams of Galilee

BALLADS

Only a Pansy Blossom
Silver Threads Among the Gold
I'll Take You Home Again, Kathleen
Take This Letter to My Mother
Only to See Her Face Again
When You and I Were Young, Maggie

BANDS

America, I Love You
El Capitan and Manhattan Beach Marches
Cavalry Charge
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Blue Danube Waltz
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American Fantasie
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MARCHES

Dominion of Canada March
Boys of the Old Brigade March
Ben Hur Chariot Race March
Athol Highlanders' March
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Spirit of Independence March

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Medley of Country Dances
On Parade Medley
Fisher's Hornpipe Medley

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First Heart Throbs (Bells)
Dancing on the Housetop (Bells)
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Kentucky Babe
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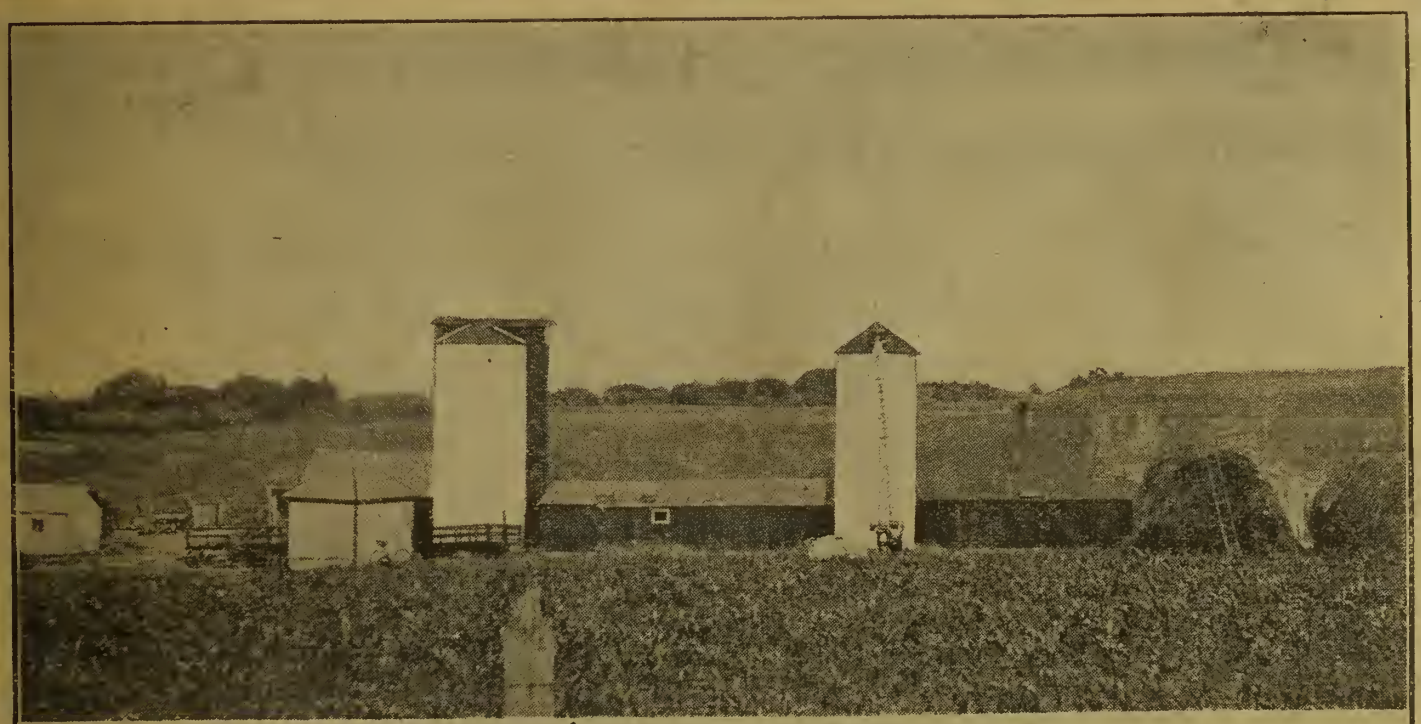

Upper view: The A. F. Reynolds Farm, near Elizabeth, Colo. Dairying is the chief business on this farm. Lower View: A herd of dairy cows coming in off pasture southeast of Denver.

Denver, Colorado
Dec. 1, 1917

ANNOUNCING A SPECIAL 20-DAY BARGAIN PERIOD

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DENVER, COLO.

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Pinto Bean Growers Are Not Getting a Fair Price

REVIEW OF THE SEASON AND ESTIMATES OF COST OF PRODUCTION

ALVIN T. STEINEL

PINTO bean growers are casting up the season's results and wondering whether the crop has been a paying one at the present high cost of production. It undoubtedly has paid where the yields were good, but the dry-land farmer who was missed by summer showers and whose yield did not go over 300 or 400 pounds to the acre has come out on the wrong side of the ledger. The man who got 500 pounds and upward on dry land, or the irrigation farmer with, say 1,500 pounds and over, is fairly well satisfied with results, tho the high prices prevailing at the opening of the season did not last. The drop was thot to be due to the big crop of pink beans grown in Manchuria by cheap Japanese labor, with the backing of American capital. According to food administration announcement, made thru these columns in the issue of November 1st, something like 2,000,000 tons of these Manchurian beans were grown and they will begin to reach the Pacific coast about December 1st. These beans are smaller and not of as good quality as the Pintos.

The big bean drive made by Colorado and New Mexican farmers in the past season was a remarkable effort, with results that should be highly gratifying to the government, if not to the grower.

Colorado's total yield is estimated at 90,000,000 pounds, as against 27,000,000 pounds in 1916. New Mexico this year produced about 60,000,000 pounds of Pintos. Government estimates of the total yield of beans in the five bean-growing states is 15,957,000 bushels, against 8,846,000 bushels in 1916.

At the time this is being written (November 15th) quotations on recleaned Pintos at Colorado shipping points were $6.50 to $7.50 per cwt. At the same time, the quotations at Grand Rapids on Michigan white beans were $7 to $8 per bushel, or $11.60 to $13.33 per cwt. Allowing for the difference between Grand Rapids and the Michigan shipping points, there is still too great a differential over the price of Pintos. This differential is an arbitrary figure fixed not on the basis of food value, but on color. The task before the growers of Pintos is to convince the consumer of the fact that he gets just as much food value and a better flavored bean when he buys Pintos.

Comparative analyses of Mexican navy and lima beans taken from "Foods, Their Origin, Composition and Manufacture," by Tibbles, show navies to have a slightly higher fat and protein content than the Mexicans, but these analyses were undoubtedly made from inferior grades, as the results are given under the Mexican name, "frijoles." The market Pinto of today grown in New Mexico and Colorado is a much better bean than the common Mexican "frijole":

Frijoles

	Per Cent
Water	7.50
Protein	21.90
Fat	1.30
Carbohydrates	65.10
Ash	4.20

Lima Beans

Water	10.40
Protein	18.10
Fat	1.50
Carbohydrates	65.90
Ash	4.10

Navy Beans

Water	12.60
Protein	22.50
Fat	1.80
Carbohydrates	59.60
Ash	3.50

Cost of Production

What does it cost to produce Pinto beans figured on an acre basis? Prewar estimates under dry-land conditions varied all the way from $10 to $16 per acre, but under war conditions, with labor, machinery and other costs practically double, these estimates will run from $20 to $30 for dry lands and on irrigated land from $35 to $65.

In answer to an inquiry made by Western Farm Life, Prof. Alvin Kezer, agronomist of Colorado Agricultural College, who has made a close study of the industry for several years, furnishes the following figures, which will give bean growers a basis for an estimate of costs:

Estimates From Kezer

"I have before me the account from a grower who kept books on 1,700 acres in the northeastern part of the state. This grower has failed to include interest and depreciation on his work stock and machinery equipment. Also, he has failed to include interest on lands. His account is as follows:

	Per Acre
Plowing	$ 3.50
First double disking	1.00
Double harrowing	.80
Seeding	.75
Double harrowing, after up	.80
Second double harrowing, after up	.80
Weeding, by machine	.75
Row weeding, by hand	1.50
Pulling, $4.50 per acre and board, which is equivalent to	5.50
Hauling to thresher from bunches, 60 acres per day, 10 teams hauling 6 acres each, per capita $5.50 per day and board, equivalent to $7.50 per day, or	1.25
Threshing, 17c per bushel, 10 bushels per acre	1.70
Hauling to elevator, 8½ miles	.40
Hail insurance	1.10
Seed	2.10
Adding my own estimates to the above for interest and depreciation on machines, tools and other equipment (I am making these estimates on the basis of his report of equipment used)	1.25
Land in this neighborhood is worth from $40 to $90 per acre. Using the lower figure, the land overhead at 5 per cent would be	2.00
	$25.20

"These figures are for a large tract, namely 1,700 acres, where an accurate account was kept. I think one difficulty in estimating costs by small growers is the fact that they do not assign any value to their own labor, whereas they ought to assign the going rate of wages.

"Two years ago we figured that where a man is doing all his own work and figured the going wages, that he ought to produce beans on dry lands at a cost all the way from $8 up to $16, depending on the amount of hand work or hand hoeing which he does. Where beans were put in on new breaking with one disking used in preparation for a seed-bed, where they were cultivated twice and given no hand weeding, it is possible to get them in for $8 per acre, assigning the man the then going rate of wages. Wages are now more than double for the same class of help, which makes some difference in present costs.

"I presume the Michigan figures contemplate a much higher overhead. Possibly they contemplate more operations per acre than ours do in this section, especially on our dry lands. For irrigated conditions we would have to make an overhead of at least $10 per acre for interest on investment and possibly as high as $15 for that purpose. Irrigation costs for two irrigations would be about $4 per acre, or $8, and the water tax would run from 80 cents an acre to $4 an acre, depending upon locality. The seeding per acre would be slightly higher and haulage and threshing costs would be slightly higher, because of greater yield under irrigation.

"The yields I have given you in the above figures were 600 pounds per acre. Irrigated beans have averaged this year better than 1,200 pounds per acre, and lots of them are going 3,000 pounds. Threshing costs are running approximately 3 cents per pound."

The Michigan Bean Growers' association, whose figures are referred to by Prof. Kezer, estimated that it cost their farmers $57.43 per acre to grow and market navy beans this season. On this basis they asked a price of $8 per bushel, or $13.75 a hundred. Quotations started in the neighborhood of that figure, with Pintos around 10 cents. The drop in price will affect the acreage in Colorado and New Mexico for 1918. It will discourage a great many city people who put capital and tractors to work on idle land this year, but it will not have so great an effect on the established farmer, especially on non-irrigated lands, where Pinto beans fill an important place as a drouth-resistant, leguminous crop that benefits the soil and is easy to grow.

In the irrigated sections it is prob-

Turn to Page 13

Selecting Pinto Beans for Seed

The first work in the production of pure pinto bean seed was done this season in Las Animas county, Colorado, by boys and girls who are members of pinto bean clubs organized by Charles E. Smith, county agriculturist. The accompanying illustration shows plant selection for seed on a Las Animas county dry land farm. The people among whom this work is being done are mostly new settlers, who are not yet familiar with farming under light rainfall and many of whom never grew pinto beans until 1916, or perhaps this year. This accounts for the fact that when this particular photograph was taken there were as many adult farmers in the field as boys. The fathers came to hear what County Agriculturist Smith and W. E. Vaplon, state leader of boys' and girls' clubs, had to say regarding plant selection. They were as eager to learn as their sons and daughters.

Under the plan outlined by the county agriculturist the club members made a contract with parent or guardian for rental of an acre of land on which the beans were grown, the parent to have a supply of selected seed and the boy or girl the profits on the crop produced. These acre plots were used during the growing season to show the type of plant to select for seed and later there were demonstrations to show the harvesting and hand picking of the seed from such selected plants.

Many adult farmers who for the first time had their attention called to the great difference between individual plants declared that they were going home to make the same kind of selections in their own fields for seed for next season's planting. They said they did not know, until they made this close examination, that there was such a variation. It was hardly necessary to tell them that the vigorous plant with a large number of well filled pods would produce the best seed.

After the selected plants were harvested and the beans threshed out by hand the boys and girls were shown the type and color of bean desirable for seed, the off-colored and poorly developed beans being discarded.

Las Animas is one of the big bean producing counties of the state and growers are very much interested in any movement that will give them increased yields and insure them disease free beans. The work of the boys' and girls' clubs is taking bean growing out of the haphazard class and putting it on a scientific foundation. Methods of culture are taught right along with lessons in seed selection and the adult farmers are adopting these methods just about as fast as the juvenile club members acquire them.

Analysis of Livestock Shortage by Herbert Hoover

THIRTEEN TO ONE RATIO TO STIMULATE HOG PRODUCTION

THE United States Food Administration will seek to keep the price of hogs to the farmer at not less than $15.50 per hundredweight (Chicago basis), for the present, and it has established a ratio of 13 to 1 for hogs farrowed next spring, which means a price that will give the producer 13 times the average cost of a bushel of corn for each 100 pounds of pork, live weight. This is not a guarantee, but a statement of the intentions of the Food Administration, the details of which are given at length at the conclusion of this article, which takes up, first, the general livestock situation as it relates to the farmers of the Rocky Mountain states.

The policy in Europe has been to slaughter meat animals to make room for greater bread grain production. Total decreases shown in statistical information given out by the Food Administration are: Cattle, 28,080,000; sheep, 54,500,000; hogs, 32,425,000. The following are Mr. Hoover's conclusions and suggestions resulting from consideration of these figures:

By Herbert C. Hoover

This encroachment into the herd, for reasons stated, will go on with increasing velocity as long as the war lasts. Prior to the war our western allies have always imported a considerable amount of animal products. Some person might assume that this encroachment upon the herd would satisfy the total imports. Such is not the case. It becomes a modification of both factors. For instance, Europeans have always relied, to a considerable degree, upon the United States for pork products, and if they slaughtered the larger portion of their hogs they could still not supply their demands for fats. More especially is this true because the imports of fat products of one kind or another from the neutral countries surrounding Germany to the allies are constantly diminishing from one political reason after another.

In the matter of beef, it appears to me that the allies can, by sufficient encroachment into the herd, support themselves without any consequential expansion of imports from the United States during the period that the slaughter is carried on, but there are limits to even this. Europe, so far as it is able, must preserve its milk herd, for the vital existence of a nation depends upon its supply of fresh milk. In any event, the large amount of roughage in every country makes this possible to some degree without the use of concentrates. So on the beef side it is impossible and undesirable to slaughter to an extent that encroaches upon the milk herd, for when that point is reached all further supplies of beef must be imported.

It is useless to slaughter beef in such an emergency under, say, two years of age, and the encroachment into the cattle herds of one ally is limited practically to the killing of mostly male animals above 2 years of age and of the useless milk animals. If the war continues long enough this point of slaughter will be reached amongst others; and the time will come when we will be called upon to find large quantities of beef before the war is over, altho for the next few months the demand for beef may not be so heavy upon us.

Hog Problem Is Gravest

The pork problem is one not only of the deepest concern, but as our hogs lend themselves to rapid increase, it is a matter for hope of rapid solution. The following table presents statistics that are illuminating as to our hog supplies:

	Three-year pre-war average	Fiscal year, 1916-17
Hog population January 1st	61,600,000	67,450,000
Number of hogs slaughtered	53,204,000	64,798,000
Per cent of hogs slaughtered	86.3	96.1
Average live weight in pounds	219.21	211.26
Exports of pork products in pounds	992,885,000	1,501,271,000
Domestic consumption in terms of pounds of pork products per capita	72.08	75.77

Ways to Solve Hog Problem

If we are to maintain our supplies to the allies, we have only one of two courses, or a combination of both: First, we must reduce our consumption of pork products to the pre-war normal or better; and, second, we must increase our production. **If we discontinue exports, we will move the German line from France to the Atlantic seaboard.**

Pork products have an influence in this present world situation wider than one would ordinarily attribute to them. The human body must have a certain amount of daily intake of fat. Whether this fat is by means of dairy products, by vegetable oil, or by pork products becomes a secondary question in time of complete national stress, because pork products to some degree will substitute for the other fats.

Increased production in pork fats can be accomplished with a great deal more rapidity than increased production of dairy products and on a much more widely extended scale. An increase in pork fats can also be made more rapidly than an increase in vegetable fats. It appears to me, therefore, that we must concentrate on the increase in the production of hogs if we are to answer the world's craving for fats. Fortunately our situation during the coming year lends itself to this end.

Enormous Feed Crop in Hand

Due to the blessings of the Almighty and the energy of our farmers we have secured one of the largest corn crops in our history. We also have abundant crops of oats, barley, kafir, soy beans, velvet beans, cottonseed and peanut meal, and we will have a larger supply of mill feed than normal. Not all of these are hog feed, but they will enter the general feeding question by adding to the general pool of feed.

If we aggregate all of the feeding stuffs, and if we subtract the amount of fodder grains which we can expect to export in view of the present shipping outlook, we will find one astounding fact which should give American farmers pause: We have today somewhere near the equivalent if 1,000,000,000 bushels of feeds more than last year. This is an increase of nearly 25 per cent—for which we have no corresponding number of animals to feed unless we begin to increase them at once. In other words, as our animals have not kept pace with our increase in concentrates, we have much more feed this year than we have animals to eat it. Therefore, if farmers are to find markets for feed, it must be to a great extent thru an increase in animals.

The monetary interpretation of this situation must be that we will have a low range of prices for feeding stuffs and, in view of the European situation and our own shortage in hogs, we will have a high average price for pork products. Therefore, it must be to the vital advantage of every farmer to raise hogs. * * *

Our Diminishing Wool Clip

Some of the other animal questions I might touch on briefly as well, altho the same line of argument applies all along. Suppose we take the case of sheep. Our sheep have been diminishing steadily since the war began. We produced in 1916 only 35 per cent of the wool that we used. In providing uniforms for millions and millions of men the world is using more wool than ever before in its history. We have never seen such a price of wool as it exists today. There is practically famine in wool at the present moment. There is every reason in outlook and in profit for the increase of our sheep. * * *

A Sound National Policy

If we take the long view of the world's agriculture after peace we must assume that Europe, with her herds and flocks greatly diminished and the necessity to allow the herd to recuperate, will demand during this period of recuperation the importation of animal products upon an even larger scale than during the period of the war. During the war period some measure of supply will be obtained by slaughtering the herds, but this is burning the candle at both ends.

It must be obvious that after peace, with diminished animal herds, Europe will have less use for fodder grains; that she will have a larger acreage available for planting bread grains, and that instead of so largely importing bread grains, as has been her habit prior to the war, she will import less. **Our American farmers would be wise, therefore, to realize that for a considerable period after the war there will be a very poor export market for American bread grains, whereas there will be a wide demand for animal products. Consequently, if the animals be increased, there will be a large demand for fodder grains within our own country. In other words, the outlook of our farmers needs to be turned toward animals and their feed grains, not only now but for many years after the war.**

In the Food Administration we have discussed these problems at great length with many representative animal producers and agriculturists of the United States. We have often met the statement that in order to induce our farmers to undertake this changed strategy in production, we must secure for him some positive definite guaranty of a profit. But if I were a farmer it seems to me with the above facts so well founded—so evidently in the farmer's best interest—before me, I should, of my own volition, undertake such a policy even were there no patriotic call.

I realize that under certain conditions a lack of confidence in the stability of market prices may act as a deterrent. And further that this may sometimes come from a failure to glimpse an opportunity before one. **I therefore wish to make this positive statement; that, so far as the United States Food Administration is able, thru its influence on the purchase of pork and its products for exportation, it will do all within its power to see that prices of pork are maintained in a ratio to feed prices that will cover not only costs of production, but proper remuneration to the producer.**

Details on Hog Prices

As referred to briefly at the beginning of this article, Joseph P. Cotton, chief of the meat division of the Food Administration, has issued the following statement regarding hog prices:

"We shall establish rigid control of the packer. Fair prices to the farmer for his hogs, we believe, will

Continued on Page 7

PIGS FINISHED FOR MARKET ON THE MORRISANIA RANCH, GRAND VALLEY COLO.

Colorado's Annual Prairie Dog Damage $1,500,000

HUNDRED MILLION A YEAR IS LOSS FROM RODENTS IN THE WEST

SID KARNS

THE prairie-dog situation in Colorado is indeed alarming, when one stops to consider the damage done by this rodent. Government experts estimate the damage done by prairie-dogs in the western and southwestern states at a hundred million dollars a year.

Colorado's yearly loss is figured at one million five hundred thousand dollars. This includes only actual crop damage and not the losses on our grazing lands, which are enormous. Is this not alarming? In order to arrive at some idea of what this loss is to Colorado's farmers, let us do a little figuring.

From the opinions furnished by men ranging cattle in various parts of this state, we learn that the average expense per head for ranging cattle on the open range is $5. Now, what we waste each year on the prairie-dogs that infest our area would keep 300,000 head of range stock.

Colorado has three species of prairie-dogs. The plains prairie-dog, which is found on the plains of Eastern Colorado. It is found in greater or less abundance in all the counties lying east of the base of the mountains, and in the foothills. It is seldom found above 7,000 feet elevation. This dog is very active and has been known to attack every crop that Eastern Colorado produces, with very disastrous effects.

The second of the species is the white-tailed prairie-dog. This dog is the one found thruout the mountain parks, valleys and mesas of Western and Northwestern Colorado. It is very destructive to vegetables and other crops, and has been known to attack the roots of pear, apple and peach trees. In rare instances it has attacked the bark above ground.

The third is the Gunnison prairie-dog, found in suitable location in the following counties: Park, Teller, Lake, Chaffee, Costilla, Custer, La Plata, Archuleta, Conejos, Fremont, Saguache, Mineral, Gunnison, Montezuma, and the western part of Montrose. Along with the other species this dog is a very undesirable inhabitant The fact of the matter is that there is yet to be found the crop that is immune from the ravages of any of these prairie-dogs. They not only destroy grazing and pasture lands but attack the farmers' crops of small grain, alfalfa and so on.

Deputy Pest Inspector Burnett and County Agent Tucker Observing Effect of Poison

The writer made a trip recently with Deputy State Pest Inspector W. L. Burnett and County Agriculturist Tucker of Douglas county, visiting several farms that were suffering from the attacks of the prairie-dog. In one instance we found two burrows in an alfalfa field within a radius of one acre. The alfalfa was mowed down around these burrows to the extent of three and one-half acres. Many other instances could be given showing as serious results as the damage done in this particular field.

By far the cheapest and one of the most effective means of exterminating the prairie-dogs is by the use of poisoned grain. Strychnine is the best poison to use. It is just as effective as other poisons and as a rule is less dangerous to handle. In buying strychnine always insist on the powdered form, not the crystal, which is carried by the majority of druggists.

For the benefit of those who have not already received it I will quote Colorado Formula No. 28 for the destruction of prairie-dogs and ground squirrels. This is a new formula developed by them, and after a year's trial they are satisfied that both prairie-dogs and ground squirrels can be successfully poisoned with it at any season of the year, no matter how abundant the green food.

PART 1

Oats	14 quarts
Strychnine, alkaloid powdered	1 ounce
Starch	½ pint
Water	1 quart

PART 2

Knox gelatine, No. 1, plain.	1 box / 2 envelopes
Baking soda	1 ounce
Dark brown sugar	½ pound
Water	1 quart

Directions: Treat the grain first with Part 1, as follows: Dissolve the strychnine in the quart of water, add the starch and stir until it is all dissolved; put over fire and heat until starch begins to thicken, stirring constantly.

Pour the poisoned solution over the grain, thoroly mix until each grain is evenly coated; let stand for five or six hours.

Re-treat the poisoned grain with Part 2, as follows: Dissolve gelatine in warm water (not boiling), add soda and stir until it stops foaming, then add sugar and when dissolved, pour over the poisoned grain and again mix thoroly; spread and dry.

One teaspoonful of the poisoned grain is sufficient for each burrow. It should be placed on dry, hard surface outside the burrow.

Prairie-dog extermination campaigns have been started by several Colorado county agents under the supervision of the state pest inspector. Pest districts covering many townships are organized and the dogs are poisoned over large areas.

(Note: The figures given by Mr. Karns on Colorado losses from prairie dogs refer to cultivated areas alone and do not take into consideration the vast damage done to grazing on the public as well as privately owned idle lands of the state. The National Forest estimates are to the effect that prairie dogs decrease the carrying capacity of the forest grazing lands by 50 per cent. The total area infested in a dozen western states is estimated by the government at 30,000,000 acres, consequently the annual damage can safely be fixed at above $100,000,000 rather than under that figure.)

Borrower's Bulletin Contains Important Information

FARM BOARD RULINGS ON IRRIGATION AND ORCHARD LAND

FARMERS who have borrowed money under the Federal Farm Loan act will receive copies of The Borrower's Bulletin, a publication issued by the Federal Farm Loan board under the auspices of the United State Treasury Department. The first number of the bulletin contains much information of interest to farmers in Western Farm Life territory, as many associations have been formed in the five mountain states, others are in process of organization and many thousands of dollars have been paid out to borrowers. Rulings on a few important points are taken from the Borrower's Bulletin as follows:

Loans on Orchard Lands

The Federal Farm Loan board has made the following important decision respecting loans on orchard and fruit lands:

"On orchards where the lands have no substantial value except for orchard purposes, no loans shall be made; where the lands have a basic agricultural value, such value shall be the basis for the loans; orchards shall not be regarded as permanent improvements, but shall be taken into consideration as enhancing the general value of the land and in determining its productive value."

The foregoing decision regarding the valuation of orchard lands is based upon that section of the Federal Farm Loan act which says that the basis for appraisement of lands shall be their producing power when used for agricultural purposes.

This decision does not mean that no extra valuation will be permitted on the lands specially adapted for intensive or specialized cultivation, but it simply means that very high values attributed to fruit lands in certain parts of the United States will not be recognized as loanable values under the Farm Loan act.

Inasmuch as this attitude makes for the safety and security of the entire Federal Farm Loan system, it contributes to the advantage of the great majority of farmers of the United States.

It must be remembered that mortgages made under the Farm Loan act may run from five to forty years. Fruit trees are not insurable. They cannot be considered a part of the loan value of the land, because they are destructible. They are subject to disease, storms and blights. While under the care of its present owner fruit land may be made to show large profits, there is no assurance that the present owner will outlive the mortgage, and his successor may be a man who would turn fruit land into a liability rather than an asset.

Irrigation and Homesteads

The Federal Farm Loan board has made the following ruling as to the application of the Federal Farm Loan act to holders of land under irrigation or homestead:

"In the matter of loans on lands under irrigation projects it is declared to be the sense of the board that where such lands are under so-called government projects and a specific lien is reserved in the government granting title, loans cannot be legally made.

"Where the lands are in irrigation districts and the water charge is collected upon a fixed annual basis as other special assessments, the board holds that loans may be legally made, but urges that the amount and frequency of such payments be taken into consideration in determining the amount of the loan.

"In the matter of loans upon homesteaders' land office receipts the board holds that where the homesteader has lived out the required period and makes proof by virtue of such residence his land office receipt may be accepted as evidence of title for the purpose of the loan. Where the homesteader commutes at the end of fourteen months and pays for his land the board will insist upon patent."

At this time a bill is pending in Congress which will, if it passes, enable the Federal land banks to loan more freely on irrigation project lands.

Voting Strength Defined

The Federal Farm Loan act provides that each member of an association shall have one vote for each $5 share of stock held, but that no one member may cast more than twenty votes.

This regulation is applicable only after farm loan associations are actually chartered and have legal existence. It is not necessary to follow this rule in the preliminary organization of a farm loan association.

The Federal Farm Loan board has ruled that, in view of the fact that during the process of preliminary organization the loans of members have not yet been approved, and the number of shares which each member will own is undetermined, each member should be limited to one vote.

Territory Limits Fixed

As to the territory which may be covered by a farm loan association, the Federal Farm Loan board has ruled:

No farm loan association may operate in territory covering any part of two states. In defining the territory within which an association will do business, said territory must be entirely within the boundary of a single state.

Under certain circumstances, however, the territories of two associations may overlap so as to give borrowers a choice of associations.

"Actual Farmer" Defined

The Federal Farm Loan board has ruled that only actual farmers may borrow from the Federal land banks. It has interpreted the term "actual farmer" to mean:

One who conducts the farm and directs its entire operation, cultivating the same with his own hands or by means of hired labor. An owner, to borrow under the Federal Farm Loan act, must be responsible in every way —financially and otherwise—for the cultivation of his land.

Anti-Freezing Mixture

If a water-cooled engine is not carefully guarded in cold weather and the water is allowed to freeze, pipes or radiators will break or a water jacket will crack. To prevent such damage, the safest plan is to drain the water from all parts of the system when the car is left for the night or for a long time during the day. The engine may then be allowed to run a few minutes to make sure that all the water has been removed. If the car is used a great deal in cold weather it may be advisable to use a non-freezing solution. A mixture containing 20 per cent of denatured alcohol will freeze at 10 degrees above zero; a 30 per cent solution will freeze at 5 below zero; 40 per cent at 20 below, and 50 per cent at 35 below.

Barnyard Manure on Dry Lands

RIGHT AND WRONG PRACTICE IN APPLYING IT

C. D. Hyatt

We are told that America's greatest waste is that of manure—two billions of dollars annually. In the cities manure is selling as high as $4 per ton, and in certain instances higher even than that. In some of our Western towns the drayman is paid a certain amount to go around over town and gather up this fertilizer, then take it down to the creek and dump it over the bank ,or into draws or the city dump—anything to get rid of it with the least amount of labor. Prof. Henry says that on the average farm, and counting cost of hauling, manure should be worth from $1 to $2 per load at the stable. Warren says the average horse will produce in one year about thirteen tons of manure, with the bedding, and the approximate cost of this, if purchased in fertilizers, would be $33.72. The average cow will produce annually around fifteen tons, with an approximate cost in fertilizers of $31.20.

Some dry farmers do not believe in manuring their lands, as this, they claim, causes their crops to "burn out." I was talking to an eastern Colorado farmer who said he didn't believe in putting manure on dry land; he had tried it on a corner of his wheat field and that spot had produced nothing but weeds. But here was his method of applying the fertilizer: Just after harvest a year ago, and before the stubble was plowed for fall seeding, he hitched his teams to wheeled scrapers and dug out what he could of the dry, caked manure in his corrals. This was dumped in piles and so close together that, from his statement, I judge, would have covered the ground to an average thickness of from six to eight inches. He then, when plowing the field, waded thru these piles the best he could. And he didn't raise any wheat on this area.

Another farmer, a rancher in northern Colorado, was showing me his cattle feeding pens, with the troughs and hay-racks in the center and a board windbreak on the north and west sides. In these pens manure covered the ground to a depth of one or two feet. These pens were located on a steep south slope with running water at the lowest points. The past spring was wet. The manure was leached out, the liquid being carried off by the stream. Then followed a dry, hot summer, so that by the middle of October the manure was as dry as the top of an old strawstack, and much dustier. But this man was going one better than our eastern Colorado friend; he was spreading this manure on dry land which was to be fall-plowed and later put into spring grain—which was well and good; but by exposure the manure had lost at least half of its value before ever reaching the field to which it was now being applied.

Now in this case there would be no "burning out" of crops, because first, the manure was spread evenly and thinly over the surface; and, second, the manure being turned under in the fall, would be thoroly soaked by the winter and spring moisture and would be largely rotted by the time the growing plants' roots reached it. Also, humus would in this way be added to the soil, and humus is a great moisture retainer.

Still another farmer, Mr. H. by name, and who lives three miles from a certain town in northwestern Colorado, hauls out from this town each winter quite a lot of stable manure which he applies to his land. This man's place is all dry land—a grain and stock ranch. Mr. H. has a rack, which will hold two or three tons of manure, fitted to his bob-sled, so that when snow comes he can start in hauling manure from the town. This manure costs him nothing; the people are glad to get rid of it. He hauls this manure out to his ranch, where it is scattered thinly and evenly over his young wheat. He is careful that no large, strawy bunches are left on the ground. In the spring as early as possible he harrows his wheat, and according to his statement there is not enough coarse material to interfere greatly with the harrowing. Very little of the manure is wasted, as Mr. H. hauls this practically as it is made. It is thrown on top of the snow, holds the snow from blowing, and when thawing begins sinks down into the snow and what leaches out goes directly into the soil. The finer particles are harrowed into the soil, where they soon rot, while the coarser material is left on top of the ground and forms a protective covering or mulch for the young wheat plant.

So far Mr. H. has been able to cover only a part of his wheat ground with manure, as he raises this cereal quite extensively. In the fall a part or all of that portion of the stubble which was covered with manure the previous winter is plowed under and let lay for the following spring's crops. This coming winter Mr. H. expects to haul more manure than ever provided he can get it. Other people, too, are beginning to "take notice." Not only would he like to cover all of his young wheat, but also that portion of his wheat stubble which was not manured the winter before, and which he intends plowing up in the spring for August seeding of winter wheat. This spring-plowed ground will be harrowed after every summer rain, and the ground being plowed when moist, and harrowed to preserve this, as well as subsequent moisture, the turned-under manure will have a good chance to rot before the young wheat roots get to it. In fact, leaving out the element of protection, this would seem a little better practice

Turn to Page 10

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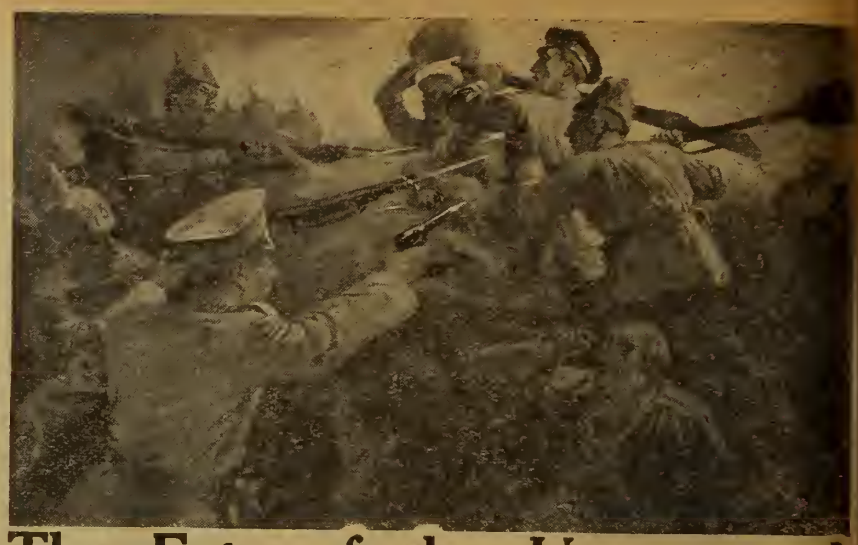

The Fate of the Unprepared

Among the remarkable events of this war no fact stands out more startlingly than the tragic sacrifice of Russia's unequipped soldiers.

The army has been victimized by intrigue and treachery. Guns were sent to the front without ammunition and ammunition without guns. Supplies were provided that when unpacked proved to be rubbish. Left stranded by communications that broke down under slight pressure the brave Russian troops hurled themselves again and again against foes perfectly prepared.

From the very verge of victory they doggedly fell back fighting with stones and clubs and iron bars, resisting heroically but ineffectively.

No thought can be more abhorrent to Americans than that of our boys ruthlessly slaughtered because of lack of equipment or support which it is the first business of us at home to supply.

Our Government, never before so powerful, is working prodigiously in the preparation of armies and means of warfare. Throughout the nation there is a unity of purpose that is piling on the altar of liberty every personal ambition and corporate gain.

Mines, factories, farms, shipyards, the counting houses and shops of every industry are laboring day and night to supply the sinews of war.

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The Rabbit as Food

In all the talk of high prices that we hear these days, one may well wonder what we are to do for meat. We are constantly being told about the increasing scarcity of meat animals, and we see that eggs and butter are hitting the high places.

If there is any solution, it must be a home-made one. And that is the kind that is on our mind at this time—the rabbit.

Men have been breeding domestic rabbits, especially in the European countries, for many years. It is only recently, however, that we have come to notice their value as food. The fancy pedigreed breeds were about all that had had time to come to our notice. But now we find several counts in favor of the domesticated rabbit as a table delicacy.

In the first place the meat is unrivaled for delicate flavor and easy digestion. Physicians recommend it to people of weak digestions. The meat is very easily prepared, the animal being the easiest and quickest of all animals to dress. The cooking is done the same as that of the chicken, the best results being had when it is cooked about one and one-half times as long.

Then again, the rabbit is very cheaply and easily raised. On the farm the quantity of food consumed is negligible. The animal will live well on any food that is suitable for a good dairy cow, no trouble being experienced in breaking in the rabbit to any cow-feed, if done a little gradually the first few days.

In the matter of production, the Belgian hare doe will produce four or five litters a year, averaging six to a litter. These young may be bred at six to seven months of age, and at ten weeks of age they make fine fryers. Many declare them far better than chicken.

Comparing the spaces necessary for the raising of rabbits, it may be considered that they can be successfully raised on shelves or hutches, divided off into spaces of three feet long (the shelf being 30 inches wide) and a door in front of the full length of each division. These shelves may be three or four high, thus making for easy feeding, by reason of the compact space. The shelf should slant one inch to the foot to the back, to keep it dry and clean, by providing a drain at the back. Feed cans and water cans should be nailed to a small board, or heavy crocks used, to prevent spilling in the hutch. With this simple arrangement, all the fine meat that is needed for the ordinary family can be provided with only two does and a buck.

As the fancy types sell for five to ten dollars each, a fair profit can also be realized besides the table meat. Any child of ten or over can care for the rabbits, as they need be fed but twice a day, and cleaned but once a week.

Such an easily managed source of meat supply as this should not be longer neglected. It is true patriotism to do all we can toward producing our own and surplus food, that prices may be more reasonable for those unable to produce any.

The beauty of the Belgian hare in this regard is that it can be as easily raised in the city as in the country, requiring less space and less value of food per pound than any fowl.

The normal rabbit can be well fed on simply rolled barley and alfalfa, and in the summer time on alfalfa alone, with the few bread crusts and green tops that come from the table.—Casper Coffman, Wheatridge, Colo.

Analysis of Livestock Shortage By Herbert Hoover

Continued from Page 4

be brot about by the full control which the Food Administration has over the buying of the Allies, our Army and Navy, the Red Cross, the Belgian Relief and the neutrals which together constitute a considerable factor in the market.

"The first step is to stop the sudden break in prices paid for hogs at the central markets. These prices must become stable, so that the farmer knows where he stands and will feel justified in increasing hogs. The prices so far as we can affect them will not go below a minimum of about $15.50 per hundredweight for the average of the packer's droves on the Chicago market until further notice.

"We have had and shall have the advice of a board composed of practical hog growers and experts. That board advises that the best yardstick to measure the cost of production of the hog is the cost of corn. That board further advises that the ratio of corn price to hog price on the average over a series of years has been about twelve to one (or a little less). In the past, when the ratio has gone lower than twelve to one, the stock of hogs in the country has decreased. When it was higher than twelve the hogs have increased. That board has given its judgment that to bring the stock of hogs back to normal under present conditions the ratio should be about thirteen. Therefore, as to the hogs farrowed next spring, we will try to stabilize the price so that the farmer can count on getting for each 100 pounds of hog ready for market thirteen times the average cost per bushel of the corn fed into the hogs.

"Let there be no misunderstanding of this statement. It is not a guarantee backed by money. It is not a promise by the packers. It is a statement of the intention and policy of the Food Administration, which means to do justice to the farmer."

There's no law against eating turkey before and after Thanksgiving, as well as on the national holiday. The more poultry Americans eat at home the more red meat we can spare the boys in France and our Allies.

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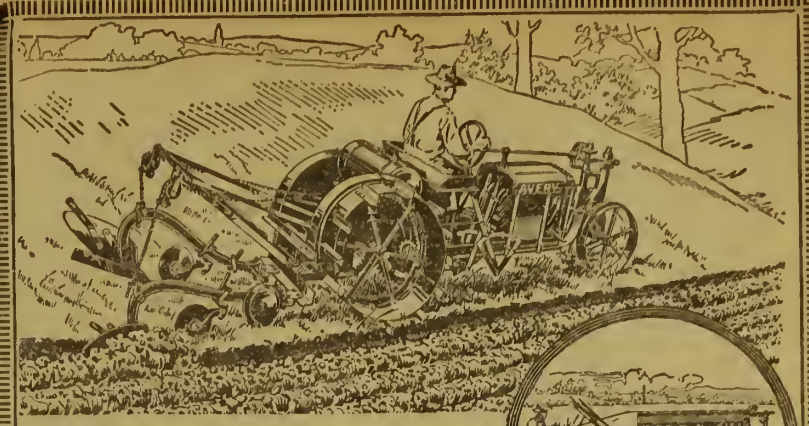

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Quit Kicking and Fight

Sensible people will now cease making predictions regarding the ending of the war and bend all their efforts toward winning, no matter what their particular share of the job may be. It is evident that we have all been doing too much bickering over side issues and thinking too little of the big task in which our country is engaged. Lately it has come home to us with greater force, as we scanned the casualty lists and found the names of Americans among the dead and missing, that those of us who cannot go to the front must be more forgetful of self-interest in all our dealings. What if the other fellow is making more money than we are making? Does it make him any better citizen? Do we want to put ourselves in his place? Are we moved by righteous impulses when we raise a hue and cry about our neighbor's shortcomings, or are we merely envious because we cannot put our own fist into the pile aud draw out a handful?

There is no better time than the present for self-examination; an analysis of our motives and aims in our relations with our fellow men. It has a whole lot more to do with winning the war than we imagine. Our country is in the war from no mean or selfish purpose. We are called upon to make sacrifices for an abstract principle, variously designated as democracy, liberty and freedom of thot. There will be no spoils of war to distribute when the final victory is won. It will then be a case of sorrowful readjustment, and let us hope that the tragedies be borne with fortitude. If the highest ideals are to prevail in the actual warfare at the front no lesser sentiment should animate those who toil at home for the safety and comfort of the men in the trenches.

The air is full of discord; strikes threaten, political upheavals are planned; selfish schemes are set on foot; class is arrayed against class. No amount of Liberty Bond subscriptions will compensate the nation for the loss of mutual confidence and helpfulness. What is there to do in the circumstances? Each and every individual must, if he would serve loyally, set his own household in order; keep his motives pure and true; close his ears to the disturber and political trouble maker, and face forward, hold himself in readiness for any sacrifice of property or person.

Who Is Making the Money?

Who is the profiteering middleman whose operations have caused the cost of living to mount to unreasonable altitudes in the past three years? The food administration laid its finger on the sore spot recently when the rules governing licensed food handlers were promulgated. This was the statement: "Eliminating unjustifiable sales from one wholesaler to another, stopping speculation in futures and having butter, cheese, eggs and poultry handled in the most direct route from producer to consumer are the chief objects at which the new produce rules of the food administration's licensing system are aimed."

The general public is not fully aware of the fact that wholesalers in food products have long made it a practice, as a profitable "side line" of the business, to speculate in the necessities of life. Sugar has been a favorite speculation, just as wheat has been with the millers. Canned goods were often handled the same way. Large retailers, assisted by tips from manufacturers' agents, participated in these speculations. While these deals were not made in futures, but in the "visible supply," the product often did not actually change hands more than once in three or four "turnovers," remaining in storage until speculation had reached top notch, when the consumer paid the profits to the various middlemen.

This is the form of gouging that the food administration seeks to eliminate. The practice has been carried on under cover of respectability, many a jobber having grown rich thru unjust profits reaped because of his control of the market in certain commodities. Perishable and semi-perishable products in cold storage, particularly butter, eggs and poultry, have been manipulated in an outrageous manner, but the public has long been aware of this, but hardly of the extent of the speculation carried on with non-perishable products in which there is a seasonal price fluctuation. The people are cutting their eye-teeth.

While the war lasts the cost of living must of necessity remain high. There are a dozen good reasons for this: the withdrawal of millions of men from productive occupations; the cutting down of agricultural production in Europe; the scarcity of labor for the farms; the shortage of shipping; the submarine menace with its incident high risks and losses, and the diversion of every mobile dollar to war purposes. The world is engaged in a carnival of destruction, and it will have to pay the price. Let us hope that the readjustment of business practice forced by the war will become permanent. In the ironing out process producer and consumer suffer, but the end to be attained is worth the tribulation; and for the profiteers and food speculators who are on the operating table nobody has any pity.

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Costs $15 to Produce Pork

Pork can be produced at a profit even with the present high price of feeds. This, together with the fact that the ration received by fattening hogs has much to do with the economy of pork production, has been shown clearly in demonstration feeding tests conducted at the St. Joseph stockyards by the University of Missouri College of Agriculture and the Kansas State Agricultural college working in co-operation. R. M. Watkins, manager of the demonstration feed yards at St. Joseph, presents the following data concerning the cost of producing pork with the various rations.

The results given are the average of four successive ninety-day feeding periods conducted at the demonstration feed yards. A ration of shelled corn and tankage required 389 pounds of shelled corn and 28 pounds of tankage to produce 100 pounds gain. The cost of gain was $15.15 a hundred. A ration of shelled corn and linseed meal required 415 pounds of shelled corn and 27 pounds linseed meal to produce 100 pounds gain. The cost of gain was $15.63 a hundred. One period of feeding shelled corn, tankage and shorts showed approximately the same cost as shelled corn and tankage. The feed prices upon which these figures are based are corn $2 a bushel, tankage $4.50 per hundred pounds, linseed meal $3 per hundred pounds, shorts $2.50 per hundred pounds.

Fedeers will note that pork can be produced, with feed at its present high price, at about $15. The unanimous opinion of the best authorities is to the effect that the present high price of hogs will be maintained for some time to come because of the demand for pork products and the apparent scarcity of them. The fact should also be considered that if crops can be fed on the farm, and made to bring as much money as they would if sold, the fertility left on the farm makes that method highly advisable.

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Between Scylla and Charybdis

Not long since a professor of zoology over in Kansas made a public plea for preservation of the sparrow, stating that this active feathered forager does more good than harm. One of the assertions made was that the sparrow is doing much toward keeping down the dandelion pest, the birds being seed eaters. One familiar with the progress of the dandelion pest along the eastern slope of the Rocky Mountains is moved to wonder—if the professor is right—just what this region would look life in the spring at dandelion blossom time if there were no sparrows! Or, maybe, our mountain states sparrows are slackers? There is certainly enough dandelion area for them to work on. Can it be that we haven't enough sparrows to consume the dandelion seed crop? And what shall we do: be content to let the dandelions rage and roar or increase our supply of sparrows?

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Removing Carbon

Carbon may be removed from the automobile engine cylinder by means of a carbon flame, without injuring the mechanism, if the following precautions, suggested by the Department of Agricultural Engineering of the Nebraska College of Agriculture, are observed: The radiator must be filled with water to keep the cylinder walls and valves cool. Both valves must be closed and the piston placed at the top of the cylinder to confine the oxygen in the combustion chamber. If compressed air is at hand after burning out the carbon, the engine may be turned over until the exhaust valve is open and a jet of air introduced into the cylinder to blow out all loose particles of carbon which will prevent the valves from seating properly and thus impair compression.

The Farmer's War Responsibility

The war has given to the American farmer the greatest responsibility, the greatest privilege and the greatest task any man or any class of men have ever known.

The American farmer in large degree will determine the trend of human history for all time to come, because the enormous ultimate consequences of this conflict rest primarily upon the farmer's production of food and feed to sustain the fighting forces. They might fail even with an adequate food supply; without it they are certain to fail.

But in his field, far from the fury of battle, far from either the adventures or the horrors of the firing-line, the American farmer will say whether autocracy or democracy shall rule the world during the seasons that are to come.

In a sense the war will be won or lost in the fields, gardens, orchards, pastures and hog lots of the American farmer.

The hope of the American citizen, not a farmer, also hinges upon adequate agricultural production. Our aeroplanes are useless, our guns are spiked and our rifles jammed, our shells are but as harmless baubles, if the farmer fails. This must be understood in all its grim force by every man, woman and child in America; by farmers and by those who are not farmers.

With food we can win the war.

Lack of food will lose the war.

Whether or not we produce the food depends upon whether or not each and every individual farmer does his level best on his farm—produces its maximum.

But the "agricultural problem" means not merely the production of foodstuffs and feedstuffs and livestock. It means the conservation of the food after it is produced. That puts the "agricultural problem" squarely up to everyone from the man on a forty-acre field to the man whose fertile lands run farther than he can see; from the tenement cave-dweller to the occupant of the costliest mansion.

The agricultural problem today means to every American, and indeed to every civilized person on earth, simply whether he shall, when this strife ends, be a free person in a free land or whether he shall be bossed from Berlin.

That is the precise interest that you, now reading these lines, have in the agricultural problem in America today. You may have been a farmer all your life or you may not know the difference between a straight furrow and a threshing machine—no matter what your condition may be, one of the two divisions of the agricultural problem is yours: to produce food or to conserve food.

Many people have thought of the war as "far away," as a remote, impersonal thing, a sort of dreadful nightmare—but not as a spectre menacing our immediate persons and property. Our appreciation of the actuality is more poignant now, with our own flesh and blood upon the firing-line. That firing-line is in France today. It will come to America if the farmer fails.

No matter what course military strategy may take, the final battlefield of the war is already fixed. The Waterloo of the Prussian autocrat and all he stands for, or the Waterloo of American liberty—the end of autocracy or the end of democracy—the end of Prussianism or the end of freedom—will be wrought on the battfield of the American farm—every American farm.

But even victory there will not avail if we lose in another equally fateful battlefield—the American kitchen. If we produce to the limit of farm resources and energies and do not conserve what we produce we may lose by waste.

No conceivable responsibility could be more grave, no privilege more proud, no opportunity more rich for significant service than the American farmer has today. The war has sounded a call to duty to every individual thruout civilization. The course of the individual life is not now to be considered in terms of self. The question dominating every individual is for what service can he be used—what can he best do to help win the war. To some the call comes to march away with uniform and gun; to some it comes for the organization and administration of parts of the great war machine—to the American farmer comes the call to feed the forces fighting for liberty. To every other man, woman and child comes the call to save.

That about sizes up your personal interest in the nation's agricultural production and conservation program.—CLARENCE DUBOSE, Editorial Staff, U. S. Department of Agriculture.

Western Farm Life the Best

Western Farm Life: Enclosed please find check for $1.00 for one year subscription.

Kindly let me have the numbers from November 1st on, as I am following up the articles on Sweet Clover. I have read the September numbers, and think the paper is the best yet for this country.—Geo. W. Olsen, Dove Creek, Colo.

Comment by Farmer Putnam

OUR MISSOURI FRIEND WRITES HIS SENTIMENTS REGARDING THE NON-PARTISAN LEAGUE

WELL, I wonder what Old Put is goin' to write about this time? You-all hain't the only people that's wonderin'. I kind-a wonder mysolf lots of times what the next batch of nonsense is to bo about, ospecially when I hain't boen offen tho ranch fur a month or so and they hain't no now ideas comin' to my head. That boin' the case, I think I'll write about the Non-Partisan League. Everybody is takin' a whack at it and I don't want to be behind the times. Even the editor got oxcited about it a fow weeks ago and took a hot shot at the League, mostly at Townley, the head of it.

When you git sore at anybody or anything nowadays call it pro-German. That's what we all do. It's purty rough on a feller to say he's favorin' the Kaiser, but as fur as Townley is concerned that's the fact, whether he admits it or not. Some people don't think deep enough about things. They only looks to the surface and judges by surface indications, and when a man stands up before a audience and slaps hisself on the chest and says: "I'm a real patriot and I don't care who knows it," we all more or ess applaud him and call him a loyal citizen.

If we stop and think a minit we kin see that words never yet won no wars. t's deeds that counts—deeds that's done or deeds that's left undone; the hings we do or don't do, not so much as the things we say. Sayin' plays its part, because it sometimes makes the other feller do what he hadn't oughter. So we're comin' down to the point: what did Townley do to make him out pro-German? Why, he got the Kaiser's best backer in America, La Follette, to make the big speech at a Non-Partisan League convention, and La Follette said in his speech that this country had no business makin' war on Germany and that them people that got blowed up on the Lusitania should-n't stayed to home!

Maybe, you say, Townley didn't know when he invited La Follette that he was goin' to git so darn radical? Maybe not, but he knowed that La Follette was doin' everything possible to discourage people about the war; that he fought ag'in the draft law; that he held out ag'in the war declaration with Stone and them other senators that favored Germany. He knowed La Follette was on the wrong side of the fence and he hadn't no business invitin' him to speak to the farmers at St. Paul.

Now, about the Lusitania: after the German submarine sunk that ship the bodies kept floating in by the tide at Queenstown till they was about eight hundred which they piled up on the land just like cordwood. They was two hundred and some Americans in the pile, lots of 'em wimmin and babies and none of 'em havin' part in the war. They was innocent travelers on the high seas, goin' about their business just like this was a civilized world, which they had a right to believe it was. Germany give due notice before the ship sailed that they wouldn't be responsible fur what happened, but nobody thot they meant to blow it up. Well, they went and done it and it nearly made us Americans sore. Some few of us wanted to go right over to Berlin then and thar and swat the Kaiser, but cooler heads prevailed. We just kind-a figgered that maybe it was a mistake; that it didn't happen and that it only seemed like the Lusitania was blowed up, because no civilized government would be guilty of such a thing.

But by and by it dawned on us that Germany meant business; that she was intendin' to blow up all ships that crossed the deadline, no matter if they was carryin' wounded soldiers to the hospitals or supplies fur the starvin'. She said we could send one ship thru a week, providin' this ship was loaded fur Germany or nearby, but that we'd have to paint red, white and blue stripes on her hull so's to show the submarines not to sink her.

Well, we finally got a little sore over the matter and decided, instead of paintin' stripes on our ships we'd paint a few red, white and blue stripes on the Kaiser's pants and now our Sammies is in France startin' the job of redecoratin' the German Empire, which is to be finished in spring.

Them bein' in brief the circumstances, what do you-all think of a United States senator who gits up before a American audience and sez the sinkin' of the Lusitania was justified; the murder of innocent civilians was the right thing to do? I'm afraid if La Follette had-a come into some of these here mountain states with that kind of a slander on his tongue somebody would-a throwed a lariat around his neck. Lately he hain't been sayin' things like this. Lately also, Brother Townley has been gittin' his loyalty on straight because it's gettin' to be ticklish business to go around spoutin' pro-Kaiser oratory in publick. I know out here in Colorado the bricks is awful loose in some of our publick halls and it don't take no effort a-tall to slide one outen the mortar and shy it up toward the platform, if the speaker ain't careful.

But even if they was a mistake made in invitin' La Follette to be the speaker fur the League, maybe we could furgive that if they had somethin' to offer to us farmers. Don't I think state ownership of elevators, mills, smelters and packin' houses is a good thing? Yes it is, providin' I've got a chanct to help run things up to the state house when Colorado owns all them things. It'll be nuts fur the fellers that runs the state government and make good jobs fur a lot of deservin' farmers. Most of the farmers that I know hain't got enough to do now on the ranch to keep 'em busy, and it would be a godsend if the Non-Partisan League would come and help us establish state mills, etc., which we could run in our spare time with the taxpayers' money. The League would fix it so that farmers wouldn't have to pay no taxes on their improvements and that's another good thing. Any time you want to git up a good crowd fur some new political party all you got to do is to holler tax roform. Everybody to pay taxes but us, is a slogan that ketches 'em by the hundred.

I believe in co-operation fur farmers, but sometimes we kind-a furgit that tho other feller has got to be let in on it or we ain't co-operatin'. It's the same in politics; I believe in bein' non-partisan; that is, votin' fur good men fur office, no matter what party is claimin' 'em. I believe in the farmer havin' a share in conductin' the state and national government. He has been hangin' back long enough, but I don't believe in the North Dakaota plan of the farmer takin' over all tho offices with one sweep, simply because he hain't got no right to the

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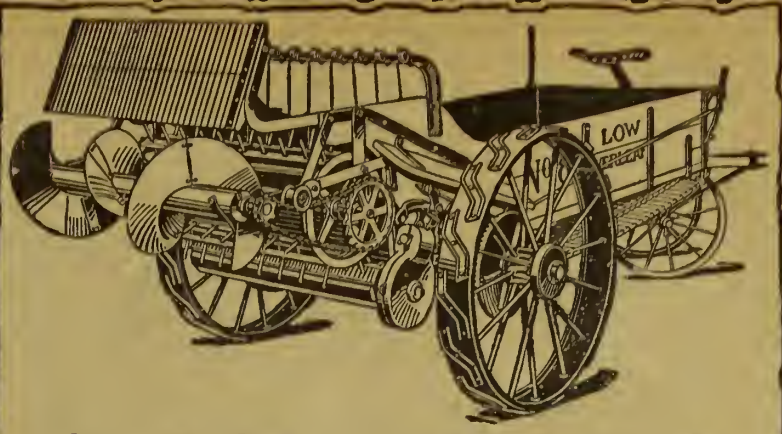

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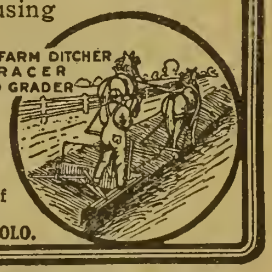

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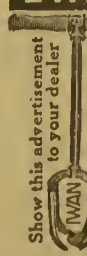

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Article V—Breeding of Farm Animals

Individuality: The question as to whether breeders should lay stress upon the individuality of an animal or on production records is one that is very frequently discussed, and which puzzles experienced breeders as well as beginners in the dairy business.

The tendency of many breeders was once to select animals of individuality that suited them and to pay little attention to production records. The first step in advance is made when the dairy breeder demands that a bull, instead of being merely of a particular breed, and of some individual merit, must have some other qualifications of good ancestry. There has, however, been a strong tendency in the last one or more generations of cattle for dairy breeders to pay attention only to the records of the ancestry, and very little to individual type. This tendency is shown by the position taken by some lecturers on dairy cattle, who suggest that you can tell little from the appearance of a cow whether she will breed high-class dairy individuals. They demand, in fact, that we turn from selection by type to selection by record. Usually it is men who breed along this line in their own herd who advise us to breed stock on the basis of production records and pay little attention to the individuality of the animal purchased.

We believe that this is a serious mistake when carried to extremes in selecting breeding stock. To ignore individuality altogether will mean the tearing down of much of the constructive work which has been done in past years by the breeders. We should, of course, pay special attention to the records of production, but should also see that the individual conforms to the type which has been built up by years of consecutive effort. If we did not do so the important characteristics of the different breeds would be lost and the stock would not only deteriorate from the breed standpoint, but would also lose in productive ability. A cow that is deficient in breed type and conformation is likely to produce stock that would be lacking in productive ability as well. This is not an unusual occurrence. One such cow that had an Advanced Registry record and was notably deficient in strength and constitution failed to produce offspring that were in any way her equal, largely because of that defect. On the other hand, many instances could be given where cows that failed to make records themselves, possibly on account of faulty feeding and handling when young, yet were of good type, have produced offspring that were highly creditable from the standpoint of milk and butter records.

Good individuality and type is generally indication that the animal in question is of good ancestry and breeding, and that it has inherited not only the good qualities of its immediate ancestry, but also the distinctive racial characters of the breed. In other words, the dairy animal of good individuality inherits its good points from its ancestors, which in turn will, in all likelihood, have transmitted other characters that make towards profitable production.

Breeds have deteriorated in the past very often as the result of neglecting individual merit in breeding animals for the sake of qualifications which were all on paper, but not in evidence in the animals themselves. The Shorthorn breed furnishes a notable instance of this. Breeders went wild over fashionable blood-lines and families to the neglect of individual merit. As a consequence, the breed deteriorated until the advent of Amos Cruikshank, who paid no attention to show-ring records, pedigree or family names. It is said that he only had two comments to make on any animal—it was either a good beast or not a good beast. On account of his insistence for individual merit, constitution and quality, it has started the Shorthorn breed into a new period of development that has made it the world-wide popular breed that it is today. Consequently, individual merit should be one of the first characteristics of a herd sire to determine whether he is fit to serve in the herd.

It is well, of course, to carry the study of individuality back a few generations, where possible. The offspring produced will be of more uniform excellence where the ancestors back of the parents were of strong individual excellence, both from the standpoint of type and production. This makes it necessary to make an accurate and careful study of past generations. The breeder should be familiar with the history of the breed with which he is working and with the type of the famous animals of the breed. The type of the generations to come will tend to follow the types of the ancestry for several generations back, yet on the other hand occasional culls will be produced from good ancestors. Many other things besides milk and butter records would be of use in the study of a breed if they could be gathered together systematically and made a matter of careful record. Under this heading we might include fecundity or fertility of the immediate ancestors. It would seem best for a breeder to have an official record of these animals along every one of the lines which he wishes worked out. The breeder who wins in the long run is one who keeps the balance in his herd between type and performance and securing both these, especially in his herd sire.

Inbreeding of Swine

Can I breed sows back to their own sire with success? Will inclose stamped envelope and would be glad if you would answer soon.—T. B., Olathe, Colo.

It depends on whether the sire is transmitting prominent weak points to his offspring. If not and he has proven a desirable sire, breed him to his daughters, and then quit. Do not breed him to his inbred granddaughters, and do not breed a related animal to them.—G. E. M.

Dr. De Witt Is President

At the annual meeting of stockholders of the American Hereford Cattle Breeders' association, held in Kansas City recently, Dr. T. F. DeWitt of Parshall, Colo., was elected president for the ensuing year. He had served as vice-president of the association. H. O. Moxley of Shelbyville, Ky., succeeded him as vice-president. Three members of the board of directors whose terms had expired were re-elected, as follows: W. A. Dallmeyer, Jefferson City, Mo.; Cyrus A. Tow, Norway, Ia.; A. B. Cook, Helena, Mont. Reports of officers showed registration for the last fiscal year to have been 70,292 animals, an increase of 10,999 over the preceding year. There were 70,369 transfers, which was an increase of 18,418 over the previous year. The number of new members added during the year was 1,300.

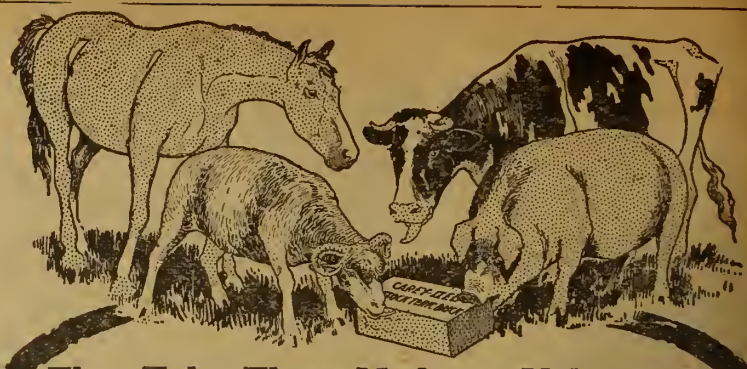
Barnyard Manure on Dry Lands

Continued from Page 6

than Mr. H.'s other method of applying the manure directly to the young plant. But either method is mighty good and highly preferable to the methods usually employed in disposing of manure in the dry-land sections.

I want to state that Mr. H. first hauled out a few loads to cover over a sandy point of land in his wheat field, in order to keep the soil from blowing in the spring, as the young wheat didn't have a chance to make much fall growth that year. This happened three years ago. The next summer he began to see what a good thing this manure mulch is. Had that first crop of young wheat made sufficient growth to afford its own protection against the winds in March, the chances are our friend would not have applied those first few loads of manure and would have missed, at least for the time, what I call his big opportunity.

The nation's brood sows are needed in breeding pens far more than in pork barrels.



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The Influence of Good Sires

Dr. L. S. Dijkstra

In a previous article I tried to explain to readers of Western Farm Life how farmers can be helped to a good sire thru co-operative associations. Now I wish to give some practical examples of the influence and importance of a good sire, let me say, a purebred sire for a herd, because no sane farmer who wants to improve his herd will choose for that purpose a scrub sire. A few years ago, and it cannot be denied that it occurs still, the sole purpose of the average dairy farmer was to have the cows freshen from time to time, without any regard for the kind of progeny. Most of our successful dairy farmers, however, have come to realize that such is not the way of progress. To show this by examples, I will here submit extracts from a report of a Co-operative Bull association of my native country (Holland).

A brief introduction as to the working of this association will not be out of place here. The association of Vlerde was organized in 1903 and started with 192 cows. A high-class association bull was purchased, to which only a limited number of cows were allotted for breeding.

A milk record was kept of each cow and of the female offspring of each. Annually a complete report of the work is distributed among the members, from which I have taken only a few striking examples and the average results of the whole:

TABLE 1

Name of Cow	Name of Daughter	Age of Cow in Years	Age of Daughter	Lbs. Milk per Year of Cow	Aver. Pct. of Fat	Lbs. Milk per Year of Daughter	Average Pct. of Fat	Increase of Milk in Lbs.
Jantje....	Jantje 2nd.....	4	4½	4621	3.35	7219	3.32	2598
Klazine...	Klazine 2nd.....	5	5	3846	3.75	6436	3.55	2590
Ziora.....	Ziora 2nd.....	3½	4	3104	3.10	4622	3.17	1518
Anna.....	Anna 2nd.....	4	3½	5431	3.00	7139	2.92	1708
Lottie....	Lottie 2nd.....	4	4	3213	3.40	5243	3.13	2030
Bertha....	Bertha 2nd.....	3	3	2840	3.12	3413	3.14	573
Paulina...	Paulina 2nd.....	6	5	6211	2.75	7936	2.71	1725

In the test of the 36 daughters, at the same age of their mothers, the following was shown:

TABLE 2

Inc. in Milk of Daughter Over Dam	Dec. in Milk of Daughter	Equal	Increase in Fat	Decrease in Fat
25	8	2	14	22

These two tables teach us many remarkable things.

1. Table 1 shows that the daughters of many cows produce in some cases nearly twice as much as their dams.

2. That the percentage of fat of the daughters is lower than of their dams, in 22 cases out of 36, as Table 2 shows.

3. That for improving a herd not only full attention should be paid to the sire's milk-producing capacities, but moreover to his butter-fat producing qualities.

4. That the buying of a good sire may perhaps in the beginning appear rather too big an investment, if co-operation is impossible, but that it will certainly repay threefold later on.

5. That at the present time many a scrub bull will bring as beef almost enough money to buy a good purebred animal.

6. That, therefore, farmers should co-operate and change their scrubs for purebred sires.

Utilization of Straw

This year's hay crop is already bringing unprecedented prices. The shortage of hay in the United States is causing alarm and no little apprehension among cattle and sheep men. Farmers of southern Idaho have a better supply of hay than those of neighboring states, but the high prices that are likely to prevail till another crop is cut demand that the most rigid economy in feeding be practiced during this coming season.

In glancing about for a hay substitute the various straws are the first materials that usually come to mind. Straw was used extensively last winter but with little or no regard for economy. Animals were allowed to run to the stacks and the greater part of the straw was trampled into the ground. At present there is a movement in the state to follow some system of feeding straw this coming winter.

There are a few principles involved in feeding straw that must be observed if the best results are to be obtained. Instead of turning the animals loose to the stack, the straw should be fed in feed racks. Putting the straw through a feed chopper adds materially to its value as a food. All straw being low in moisture content, addition of alfalfa hay or roots to the ration will correct this tendency. Straw should never be fed as the sole ration. A small amount of grain silage, roots, pulp or molasses in the combination will aid very materially, especially when fed to immature animals. Only bright straw, free from mold and excessive dust, should ever be fed. This is especially true where breeding animals are concerned. A little attention in stacking at threshing time will prevent much loss from weathering.

Of the grain straws, oats come first, barley second, wheat third, rye fourth. It is doubtful if the latter should be used for anything but bedding. Alsike clover is the best of the clover straws, followed by red clover, with white clover straw last. Of the other legume straws, pea straw takes first rank, followed by alfalfa, and then bean straw.

Straw and hay may be fed together or separately for dry stock. By adding 5 per cent of sugar beet molasses to chopped straw a good feed for carrying over stock is secured. Chopped straw fed in combination with chopped roots, or silage, also makes a good feed for this purpose.

Clover and other legume straws may be used with profit in feeding sheep, particularly if fed with silage or roots, and in this way a large amount of hay may be saved. Great care must be used, however, in feeding alsike straw to horses, since there are cases of fatal results because of alsike poisoning. Some alfalfa hay should be fed in combination with clover straws to really get the best results.

Properly cured pea straw ranks highest of all straws, approaching good alfalfa hay in value. However, it does tend to produce constipation, especially in horses, and for this reason should not be fed to horses as a sole roughage. By adding a small amount of alfalfa hay, this evil may be corrected. With other classes of livestock, pea straw may be used as the sole roughage; silage or roots should be added, however, whenever possible, to get the best results. Alfalfa straw is very similar to the clover straws and should be fed similarly. Bean straw is used very generally and considered good feed, but it is less palatable. — E. J. Fjeldsted, Field Animal Husbandman, University of Idaho.

Poison in Cane Pasture

Answer to R. V. H., Weld County, Colo.: Regarding the pasturing of stock in cane fields: Cane is especially dangerous at this season of the year, when it is apt to be frosted. Do not pasture any animals on stunted, drouth-stricken or frosted cane. If you want to take a chance, let one animal try it thoroly and if there are no ill effects then you can turn others in. There is no way of telling whether poison has developed in the stalks. Second growth is not of itself more dangerous than the first crop would be, but the conditions of frost or drouth which are said to be responsible for development of the poison, are more apt to be present at the time of the second growth.

Takes Personal Interest in Farmers

Western Farm Life: I have taken many kinds of farm papers in my time, and none of them seem to take a personal interest in the welfare of the farmers that I'd anywhere near equal to that of WESTERN FARM LIFE.—Gad Barney, Haswell, Colo.

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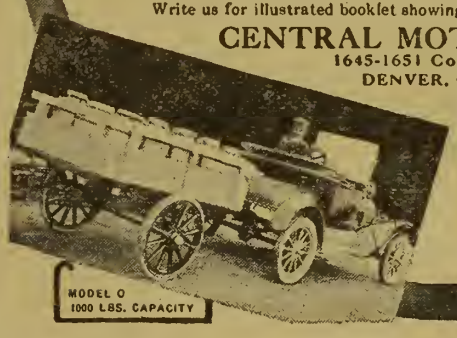

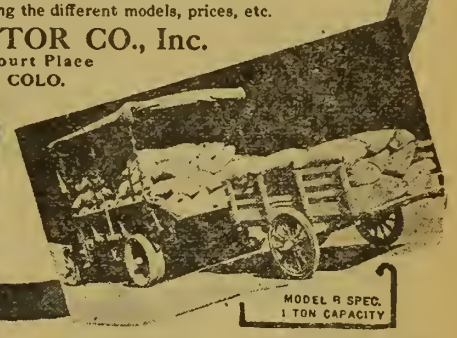

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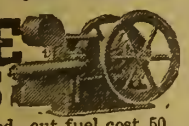

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The Farm Home

MRS. H. T. FRENCH

Questions about home problems promptly answered by letter and thru the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

December

Heap on more wood! The wind is chill!
But let it whistle as it will.
We'll keep our Christmas merry still.
—Walter Scott.

Constant Christmas

O, never failing splendor,
O, never silent song,
Still keep the green earth tender,
Still keep the gray earth strong!
Still keep the brave earth dreaming
Of deeds that shall he done,
While children's lives come streaming
Like sunbeams from the sun!
Oh, angels, sweet and splendid,
Throng in our hearts and sing,
The wonders which attended
The coming of the King!
—Phillips Brooks.

The Home Demonstrator

Writing from Washington, D. C., where it is the privilege of the editor of this department to be in attendance at the meetings of the wonderful Conference of State Leaders of Home Demonstration Agents of the United States, the one wish the writer possesses is to bring to you the urgent call for action, truly patriotic action, in the effort to serve home and country.

The work already begun in many of our communities under the provisions of the Smith-Lever bill is not lessened, only being pushed forward with greater expediency under the emergency measures and co-operating with the Food Administration that every possible agency may add its full strength to the great problem of production and conservation in the one supreme effort toward peace and victory to our country.

The home department of Western Farm Life still further urges the women who read our columns to inform themselves as to the home demonstration work being so rapidly extended thru our U. S. Department of Agriculture and state agricultural colleges. Let us not be found unappreciative or unpatriotic, but ready and anxious to co-operate in the organization of our respective communities for the successful carrying forward of the great war against food shortage and help build better homes and rear our children in peaceful, happy households.

If you do not know how to begin, write at once to the Extension Service of your state agricultural college, or if you already have a county agent, get in touch with him and ask him what you can do. This work will not be forced upon any community, as the requests are coming to our directors of extension service and state leaders of county agents faster than the needs and desires can be met. It is not only a great privilege but a duty that every American housewife awake to the call to service and that she try to inform herself how best to meet the country's great need if we would win in this terrible struggle for freedom and final peace.

The Fort Morgan Rest Room

It was the first of June before we really got our rest room started. This after several months of planning and work by many of the women. Months, too, of discouragements and of overcoming obstacles.

Now we have a very beautiful rest room which serves also as club room for the Federation. The room is in the city hall, upstairs, formerly used as city library. The city gives us this free, with heat and light and some janitor service. Then the county commissioners pay the matron's salary of $25 per month. Our matron is just the person for the place, a rather young widow without children, well educated and refined and likes the work very much. A furnishing committee have solicited from the business men money and furniture to furnish this large room with very good furniture.

Numerous plants make the room look "homey" and the ways and means committee are about to secure a piano for storage. We have a meeting of the Federation the first Saturday of every month and after the business session the meeting is turned over to one of the clubs, each taking its turn alphabetically. Each club presents any kind of program they want to, sometimes papers (histories of their community activities), reading, singing, Victrola music and often some guessing games to mix up and get acquainted—the social feature being made much of.

Our rest room register showed over 500 visitors during August and over 900 during September, which month included Frontier Days.

There is much more I could tell of the conveniences and how they are appreciated, but come and see.—Mrs. J. W. Pollock, Fort Morgan, Colo.

To Parent-Teachers' Associations

In many of the communities the Parent-Teacher associations are the very best medium thru which to work. We would like to give to our readers the following from the United States Bureau of Education and ask the hearty co-operation of all Parent-Teacher associations in carrying out the splendid suggestions:

To Parent Teacher Associations:

The Bureau of Education, thru its Home Education division, asks your co-operation in the present emergency.

The protection and education of children, always of first importance to any nation, requires even greater consideration at this time when the nation is calling every citizen to service of some sort. Since so many men are called to military service, on mothers and teachers will rest the duty of conserving as far as possible the normal life of children. Many homes are broken by the absence of fathers and the necessity for mothers to work outside the home.

The Parent-Teacher association is the logical organization to assume the responsibility for taking a census of every home in the district, of knowing definitely how the war has affected each home, of listing every agency that can be helpful in providing assistance in the care of children out of school hours and during vacation, who otherwise would be led into mischief.

Juvenile delinquency in England, France and Germany has increased greatly, owing to the unsettling conditions of the war.

The United States, profiting by their experience, must take measures to conserve the children, to throw around them such protection and care as will reduce rather than increase juvenile delinquency. Men who give their lives for their country have a right to demand that their children's lives may not be blighted, that their education be uninterrupted, that their babies' lives may be saved thru instruction of the mother in infant hygiene, that every protective and elevating influence be extended to make up, in a degree, for the abnormal conditions which war entails.

The Bureau of Education recommends to the attention of Parent-Teacher associations the following lines of service to the country at this time:

Frequent meetings of Parent-Teacher associations thru the summer as well as when schools are in session.

Taking a census of children in homes from which members are enlisted in military service.

Providing, when possible, a director of children's activities and amusements, and enlisting all children in activities or occupations suitable to their age and interest.

Providing a committee of women qualified to help erring children by personal influence and friendly help when called on for this service.

Encouraging and aiding children in home garden work.

Encouraging and aiding children in habits of thrift, in showing girls and mothers how they may utilize old garments in making many useful articles.

Aiding mothers by showing how to provide nourishing diet for their families when so many of the usual articles of food must be eliminated, owing to their prohibitive price.

Providing wholesome entertainment for youth.

Encouraging patriotism and loyalty to the high principles of democracy and inculcating a spirit of personal responsibility as a citizen in the hearts of parents and children.

Providing opportunities for non-English speaking mothers to learn English and other things that aid them in understanding American life and customs and making good citizens and inducing them to make use of these opportunities.

Holding frequent and regular meetings for mothers of little babies where the babies may be examined by physicians or nurses and the mothers advised as to their care.

Keeping the school building open for such service as the community may require during the war.

The National Congress of Mothers and Parent-Teacher associations is co-operating with the Bureau of Education in carrying forward these measures and will supply further suggestions when desired.

Dear Editor:

Here is a picture of Alice Wilma Lamle, aged 4 years and 6 months. She is feeding her flock of Rhode Island Red chickens. The picture was taken with my Eastman Premo Junior camera I got from Mr. B. H. Barber of the Western Farm Life. I wouldn't take $5 for my camera; it is sure a dandy. We have taken the Western Farm Life a number of years and think it is a fine paper.

MISS BESSIE E. LAMLE,
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2269—Good Dress for the Growing Girl. Cut in sizes 8, 10, 12 and 14 years. Requires 3¼ yards 44-inch material. Brilliantine, plaid or checked suiting, gabardine, poplin, voile or serge are nice for this style. The waist is made with Norfolk plaits, and is lengthened by a gathered skirt, in moyenage effect. The closing is effected with a shield under the front. The sleeve, a one-piece model, is finished with a smart cuff.

1974—Child's Outdoor Set, Consisting of Leggings and Coat. Cut in sizes 2, 3, 4 and 5 years. This model is good for zibeline, serge, cheviot, corduroy and velvet. It makes a nice, warm and comfortable suit for sport or outdoor wear. The leggings extend to the waistline.

2271—Simple, Stylish Model. Cut in sizes 16, 18 and 20 years. Requires 4⅞ yards 44-inch material for size 18. This will make a smart suit in serge, cashmere, gabardine or mixed suiting. It is also nice for linen, gingham, khaki, satin, silk, velvet or corduroy. The fronts are closed in coat style and a neat collar in sailor style finishes the neck edge. The pockets have shaped flaps. Stitching, braid or embroidery will make a neat finish for this garment.

Stylish Costume.. This comprises Waist Pattern 2283 and Skirt 2282. In navy blue serge with facings of gray or tan it will make a smart dress for calling or home wear. It is also nice for satin, velvet, broadcloth or velour. The Waist Pattern is cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. The Skirt in 7 sizes: 22, 24, 26, 28, 30, 32 and 34 inches waist measure.

Profitable Farm Poultry

W. E. VAPLON

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries Poultry Department, Western Farm Life, Denver, Colorado.

Winter Duties.—Zero weather got us ather early this year and naturally he fowls were the ones to suffer ost. There's no excuse for a cold oultry house, as the accompanying hoto will show. This house is lo- ated in eastern Las Animas county, ear the cedar hills, which furnish n abundance of building material and ne posts. With the exception of the oof, which is metal, and the door, ie entire building is of cedar and ırnishes comfortable shelter. Cedar oughs are packed tightly between osts to make the walls. On account f packing down, some more boughs ill be needed on the top and the ouse will be winter proof. Straw, orn fodder, a variety of other ma- erials, even Russian thistles could e made to furnish protection from now and wind.

The more costly grain is the more ecessary to save on the feed bill. If ll the grain a hen eats goes to keep- ng her warm, she will have nothing or the manufacture of eggs. Neither hould fowls be obliged to forage on itterly cold, windy days or when snow overs the ground; make a gymnasium f their house by placing roosts on a evel at one end of the building or bove a platform; keep water dish, eed troughs, etc., out of the way and over the floor deep with straw or ther litter in which to scatter the rain.

We spoke of feed troughs. Not nany country poultry houses are quipped with such an article, but hey are a necessary piece of furniture. A warm mash is as much relished by the hens on these days as noodle soup is by the boys. The mash is also economical in that it offers a means of disposing of cheap vegetables, which should be cooked and mashed and mixed with ground grain of some sort.

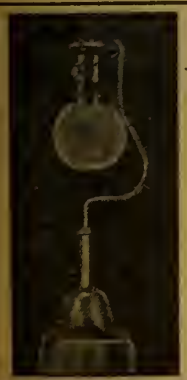
The water dish should contain water all of the time—not ice—which would be more agreeable in the summer. Do not water until mid-forenoon, then have the water luke warm. At noon, if necessary, at the time of the last feeding, surely, fill the dish with water warm or hot enough to melt the ice which has formed. Watering early, especially with cold water, is the cause of many wattles being frozen; by waiting until the sun has warmed things up this trouble may be greatly lessened.

Are you making use of the government and state bulletins? Better send to the Department of Agriculture, Washington, D. C., for Farmers' Bulletin No. 574, "Poultry House Construction.' The Colorado Agricultural college, Fort Collins, is publishing a bulletin on "Poultry Houses in Colorado." Your name on a postal card will get it. The U. S. Department of Agriculture, Washington, also has published Farmers' Bulletin No. 530, "Important Diseases."

Home Made Poultry House; Walls Stuffed With Cedar Boughs

At this time of year roup is quite the thing to have around; probably your flock will be afflicted with seventeen other ailments and your local druggist may find business dull unless you get stuff with which to dope the sick ones. Personally, we have practicaly given up dope, our whole supply being permanganate of potassium for the drinking water when colds or other slight ailments appear; epsom salts when the entire flock seems inclined to loaf and act unhappy. If you want to try the first (not as a remedy but as a preventive), buy ten cents' worth of the poison, put it into a bottle or syrup can, fill up the vessel with water, shake well to cause the permanganate of potassium to dissolve. Into the drinking water pour enough of this solution to cause a rich wine color. If you don't know what wine color is, ask Farmer Putnam; he used to live in Missouri.

During changeable weather, especially if fowls are deprived of free range, about every two weeks stir into the mash one teaspoonful epsom salts for every three or four grown fowls. The permanganate of potassium is a disinfectant. The epsom salts is a conditioner. Unless lice or mites or bedbugs are eating your fowls alive, these two things, plus the axe in extreme cases, are all the dope you need. Cleanliness (of the fowls' bodies as well as of the surroundings), plus sunshine, plus pure air, plus exercise, plus protection (from cold and storm) a variety of foods (grains, greens, milk or meat), will insure health in the flock. Those members which cannot survive such treatment and surroundings are the unfit and should be used as fertilizer.



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Why don't you market your cattle and sheep at Denver, where they will bring you greatest net returns?

Comment by Farmer Putnam

Continued from Page 9

whole works. That kind of a program of hoggin' everything don't sound like good sense to me.

If it's true that the Money Power has got everything now and that that's the cause of all of our troubles, then we won't better ourselves by givin' all the power into the hands of one class, be it farmers, business men, or doctors and lawyers. The Money Power hain't never done me no harm and I ain't afeared of it. It looks to me like this is just the same old talk we heard in Populist days back in Kansas when I was livin' in a sod house on a preemption down in Stafford county. I want some of them Non-Partisaners to show me the Money Power some time. If I ever lay my eyes on the monster I'm goin' to sneak up from behind and take a little of the gold away from it. We'd all like to belong to the Money Power fur a while and have nothin' to do but count cash. If the League kin guarantee me a easy life, plenty of rain in season, good crops, steady markets at high prices, low cost of livin' fur everything I buy and high cost fur everything I sell, no taxes fur me, plenty fur the man who hain't farmin', then I'll pay my $16 and I don't give a hang who spends it up in North Dakota.

I just want to say one word to some of my friends that's joined: Don't you think it's kind-of a bad time to be tryin' to upset our state constitution and bring on state socialism while the country is at war? We got just one job ahead of us now, and that is to lick the Kaiser and lick him right, and nobody has got any business monkeyin' with the machinery of state or national administration in a crisis. Every dollar you spend and every hour you give to producin' discontent and disturbance is so much gain fur Germany. Them is strong words, friends, strong words, but take it from me as a friend and let Townley git along without your help and your dollars. You worked too hard fur to make what you got to throw it away in political agitation that hain't a-goin' to git you nowhere and is bound to stir up a lot of fuss when we should all be doin' our level best to win the war.

THOMAS JEFFERSON PUTNAM.

Pinto Bean Growers Not Getting a Fair Price

Continued from Page 3

able that fewer beans will be grown, but that the sugar beet acreage will be increased in 1918 because of an attractive contract price averaging about $9 per ton.

Price Has Not Been Fixed

The impression has gone abroad that the food administration has fixed a price on beans. This misunderstanding arose from the fact that the army and navy purchased a large quantity of beans for delivery November 15th. Of these purchases 750,000 pounds were Pintos, for which dealers were offered 7¾ cents. According to a statement from Washington, this price was offered on the advice of the Federal trade commission, which declared that it arrived at this figure on the basis of cost of beans in the hands of the dealers. As far as Colorado is concerned, it may be said that this figure was not fair. While comparatively few beans were in dealers' hands when these lots were ordered, the dealers had paid much more than 7¾ cents to the farmers. Contracts were being made right around 9 cents.

Where the Federal trade commission got its information as to cost is a mystery. The general opinion in Colorado was and still is that the prospect of the big Manchurian crop caused the sudden decrease in price. It is not known that any effort was made by the trade commission to get accurate production costs based on this year's crop, or make any other investigation in which the bean grower had a chance to tell his side of the story.

The food administration has given out the following statement regarding its policy in handling the bean crop:

The food-control act does not authorize the food administration to fix prices to the grower of beans, but it has the responsibility of preventing the various agencies in distribution from exacting unreasonable profits, to the end that beans may reach the consumer at as reasonable a price as is consistent with a reasonable profit to any necessary factor in distribution. Speculating and hoarding and reselling within the trade must be discontinued, and dealers are required to sell at a reasonable profit over actual cost at the time of sale, without regard to the market or replacement value.

This policy is adopted for the protection of the producer as well as for the consumer, and it is much to be desired that every bean grower using soil adapted for bean growing and exercising due care and diligence should receive a fair profit over the cost of production. Of course, no agency of the Government could undertake to protect individuals or districts which have been unfortunate in weather and crop conditions if the general supply operates in such a way as to make the market values disappointing for particular sections. While the crops in New York State and Michigan are disappointing, the enormous increase in Colorado, New Mexico and California far more than offset these shortages and must necessarily affect the general market values.

In recent years large importations of Manchurian beans of good quality have been brought into this country, and the reports now are that the Manchurian crop is vastly increased over any previous year. By reason of the shortage of tonnage and the dangers in the submarine zone the Manchurian beans are very naturally seeking a market in this country. They could hardly move in any other direction.

WONDERFUL EGG PRODUCER

Any poultry raiser can easily double his profits by doubling the egg production of his hens. A scientific tonic has been discovered that revitalizes the flock and makes hens work all the time. The tonic is called "More Eggs." Give your hens a few cents' worth of "More Eggs" and you will be amazed and delighted with results. A dollar's worth of "More Eggs" will double this year's production of eggs, so if you wish to try this great profit-maker, write E. J. Reefer, Poultry Expert, 4249 Reefer Bldg., Kansas City, Mo., who will send you a season's supply of "More Eggs" Tonic for $1.00 (prepaid). So confident is Mr. Reefer of the results that a million-dollar bank guarantees if you are not absolutely satisfied your dollar will be returned on request and the "More Eggs" costs you nothing. Send a dollar today, or ask Mr. Reefer for his free poultry book that tells the experience of a man who has made a fortune out of poultry.—Advt.

Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and thru the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

Woman's Homestead Rights

Can a married woman take a homestead in her name and prove up on it?—M. S.

A married woman may make a desert entry. She may make a homestead entry: 1. When actually deserted by her husband. 2. Where her husband is incapacitated and she is the actual head of the family. 3. Where husband is in penitentiary and she is the head of family. 4. Where she is the heir of a settler or contestant. 5. Where she has made improvements when single and resided on land she may enter them afterwards if her husband is not holding other lands under an unperfected homestead entry at the time of her marriage.—Hamlet J. Barry, Attorney, 724 Equitable Bldg., Denver, Colo.

Preserving Wild Currants

Am sending specimen of a berry common in this region. Would like you to please tell me what it is and if it is good for anything.—A. M., La Veta, Colo.

Ans.: Just got in from the ranch and found your letter asking about practical uses of wild currants. I am so glad your inquiry was not made sooner, as our first experiment with using wild currants was made last week. We found that by using wild currants and wild gooseberries (ripe) half and half, the most delicious jam resulted. As the currants are rather pulpy, they make a better jam than jell. I would think any tart fruit could be used to supply the acid the currants lack. In our locality we have both red currants and yellow, but we believe this results from a marked difference in soil rather than in variety. I should add that we found it necessary to press or rub the jam thru a colander.—Josephine Lee Ferguson, Fort Collins.

Wish to thank you for information regarding wild currants. Our experience in testing them with wild gooseberries has proven successful, thanks to you and Mrs. Ferguson. So the puzzling little berry is now doing its bit to keep off war famine from this neighborhood. —A. M., La Veta, Colo.

Must Live on the Place

In buying a relinquishment adjoining my wife's homestead can I make my home on my wife's place by farming both places?—W. J. N., Rio Blanco County, Colo.

No, you cannot do this. Residence must be made on the land on which you filed.

Cutting Timber for Posts

Can a person cut posts in Campbell county, Wyoming, and take them to his homestead in Laramie?—W. B., Wyoming.

Answering your question concerning the cutting of posts: We presume your intention is to cut posts on the national forest. The Use Book giving regulations for free use of timber from national forests provides that settlers may be given the privilege to cut timber for firewood, fencing, building and other domestic purposes, but that free use is not granted to persons living at such a distance from the forest or in towns of such size that forest officers cannot practically ascertain that the material is used for the purposes named in the law. The matter is left to the judgment of the local forest officers, to whom application for permit must be made.

No Herd Law in Colorado

Is there a herd law now in force in Colorado, and give me the text of it.—W. L. T., Lamar, Colo.

There is no herd law in force in Colorado. At the last session of the Legislature the fence law was amended so that it now includes a paragraph forbidding the running at large of animals in any road lane or public highway that is fenced on both sides with legal fence. There is no restriction in the law, however, regarding the running of stock on open land.

Lampas in Horses

Will you please tell me the cause and also a good remedy for lampas in horses; also a remedy to rid horses of worms?—A. E. W., Dedman, N. M.

Lampas is a swelling of the mucous membrane covering the top of the mouth. It is caused by some irritation of the mouth, and is more troublesome at teething time, after which it will disappear. Remove the cause when possible. In very bad cases a few pricks with a suture needle, then bathing the mouth in alum water, will be helpful. If the mouth is pricked the horse must be fed on soft food for a time. Burning lampas is cruel and injurious and should never be tolerated.

For worms in horses a teaspoonful of powdered arecanut in the feed every other day is a good remedy.

Homestead Questions

1. If one has homesteaded and hasn't proved up can he relinqish back to the Government and contest another piece of land?

2. A. has filed on 120 acres of land and there are 40 acres that corner with the 120 acres. Can he file on the 40 acres, or is there any way of getting hold of the 40?—J. D. S., El Paso County, Colo.

1. Yes, providing he is qualified.

2. If the 40 acres that corner his homestead is contiguous to his homestead he could make an additional filing. The fact that it simply corners does not make it contiguous. If it is irrigable land he could file on this 40 acres as a desert, or if it is grazing land and farming land and the land surrounding this 40 acres has been filed on or held under patent for more than two years, he can have the local land office advertise it as an isolated tract and buy it if he bids high enough.

Cannot Take More Land

I have 160 acres of dry land in the forest reserve. Can I take 160 acres more outside the forest?—E. H., Pagosa Springs, Colo.

If you have 160 acres of land in the national forest you can take no additional land.

Alfalfa for Ensilage

Answer to W. T. Byers, Colo.:

Will cured alfalfa hay make good silage?

No. Alfalfa alone is not a satisfactory silage and will not keep, because alfalfa does not contain sugar in sufficient quantity to set up the necessary fermentation.

Is rye hay, cut green, good for ensilage?

It will keep better than alfalfa, but will not make a very satisfactory ensilage alone. A mixture of rye and alfalfa will make better silage than rye alone. Or a mixture of either one with cane or corn will make good silage.

Well-cured alfalfa is a much better feed when used as hay than silage made from alfalfa, even when put into the silo immediately after cutting, before there has been loss of leaves. About the only circumstances that make it advisable to convert alfalfa into ensilage is in case of damaged third cutting, which will not make good hay, but if mixed with some other silage crop, makes a satisfactory succulent feed.

Atmospheric Pressure at 5,000 Feet

1. What is the atmospheric pressure at 5,100 feet?

2. How high a column of water is that equal to?

3. From how deep can water be pumped successfully by suction at 5,100 feet above sea level?

I want to make a change in my well, but will not be able to get the box closer than 22 feet above the water and want to know if the thing will work.—C. J. H.

The atmospheric pressure at 5,000 feet is approximately 12.2 pounds per square inch, where at sea level it is approximately 14.7. The mercury barometer at sea level runs about 30 inches and at 5,000 feet runs about 25 inches. The water barometer at sea level is about 34 feet and the water barometer at 5,000 feet elevation runs about 28 feet. You notice that I say "about," because the atmospheric pressure varies at all places and sometimes we have a high barometer or heavy atmospheric pressure and at others a low barometer or light atmospheric pressure. To your question 3 I will say that theoretically water can be pumped by suction to the height of the water barometer, but in practice this is not the case, because it is impossible to get a perfect vacuum by means of an ordinary pump, consequently, at an elevation of 5,000 feet, about 18 feet, I would say, would be the limit that water could be raised by means of suction, and even this is excessive. In the installation of any pumping plant the attempt should be made to place the pump as close to the water as possible in order that the suction lift may be made as small as possible.—E. B. House, Civil and Irrigation Engineering, Colorado Agricultural College.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24TH, 1912, OF "WESTERN FARM LIFE," PUBLISHED SEMI-MONTHLY AT DENVER, COLO.—FOR OCTOBER 1, 1917.

State of Colorado, County of Denver. Before me, a notary public in and for the state and county aforesaid, personally appeared W. S. Edmiston, who, having been duly sworn according to law, deposes and says that he is the business manager of the Western Farm Life, and that the following is to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor and business manager are:

Name of Publisher—The Farm Life Publishing Co., Denver, Colo.
Editor—A. T. Steinel, Denver, Colo.
Managing Editor—A. T. Steinel, Denver, Colo.
Business Manager—W. S. Edmiston, Denver, Colo.

2. That the owners are:
W. S. Edmiston, Denver, Colo.
F. P. Johnson, Denver, Colo.
E. M. Ammons, Denver, Colo.
J. F. Reardon, Denver, Colo.

3. That the known bondholders, mortgagees and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages or other securities, are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also in cases where the stockholders or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustee, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association or corporation has any interest, direct or indirect, in the said stock, bonds or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, thru the mails or otherwise, to paid subscribers during the six months preceding the date shown above is 52,500.

W. S. EDMISTON,
Business Manager.

Sworn to and subscribed before me this 25th day of September, 1917.

EDMONTE O. HAFFNER,
Notary Public.
(My commission expires March 14, 1920.)

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ANTED—TO HEAR FROM OWNER OF farm or unimproved land for sale. O. K. awley, Baldwin, Wis.

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FARMERS—MEN, WOMEN, 18 OR OVER. Become U. S. Government clerks, $100 month. Easy, pleasant work; 30 days vacations with pay. List positions open free. Write Franklin Institute. Dept. J 177, Rochester, N. Y.

WANTED—RENTER FOR 320-ACRE FARM; 120 A. cleared; farm equipment complete, including tractor; 12 miles west of Lyford, Tex.; must be good livestock man, experienced in dry farming methods and irrigation. Write James Ross, 4613 Dover St., Chicago, Ill.

MISCELLANEOUS

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BEE SUPPLIES OF BEST QUALITY. SEND for 68-page illustrated catalog. We also sell Comb and Extracted Honey. The Colorado Honey Producers' Association. Denver.

EXTRACTED COLORADO ALFALFA HONEY. Put up in five-gallon 60-pound cans, 12½c per pound. Guaranteed. John J. Van Engen, R. F. D., Crawford, Colo.

Bean Straw Valuable

Farmers who raised a crop of beans this year have at hand a valuable feed for horses, cattle and sheep, according to the Department of Animal Husbandry of the Nebraska College of Agriculture. The bean crop is a leguminous one and the straw can be used as a substitute for alfalfa hay or clover. The threshing, of course, destroys some of the leaves and finer particles, but these can be used by cattle or sheep if they are saved. The pods are probably fully as valuable as alfalfa hay. Bean straw is especially relished by the breeding or fattening flock. It should not be fed as an exclusive roughness, but like alfalfa hay, should be fed along with other roughness in the proportion of one part of bean straw to three or four of prairie hay, corn stover, cane hay or feeds of like character.

Nearly 8 per cent of the eggs marketed in the United States are lost thru spoilage or breakage. Much of this loss could be prevented thru community egg circles.

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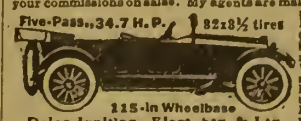
Drive and demonstrate the Bush Car. Pay for it out of your commissions on sales. My agents are making money. Shipments are prompt. Bush Cars guaranteed or money back. 1918 models ready. Write at once for my 48-page catalog and all particulars. Address J. H. Bush, Pres. Dept. 12-H



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Everything Registered
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NO DOUBT YOU HAVE SEEN THIS DISADVANTAGE IN YOUR OWN COMMUNITY BEFORE NOW.
HORSES ACCLIMATED TO YOUR OWN CLIMATE CANNOT BE COMPARED WITH EASTERN HORSES.
BUY AT HOME, SAVE MONEY AND THE WORRY OF POSSIBLE LOSS OR DISSATISFACTION.
THIRTY HEAD COMING TWO AND THREE YEARS OLD TO SELECT FROM (DIAMONDS IN THE ROUGH).
We will be glad to answer your letters.

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Breeders
Percheron and Belgian Horses and Holstein Cattle
HOWARD M. JAY, Owner
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Hereford and Guernsey Heifers

We are offering for sale three good yearling Hereford heifers, in order to reduce our herd. Two of these are by Heirs Anxiety. The dam one of these heifers was sired by The Heir, and the dam of the third is by Heir Apparent. Will be sold cheap if taken soon.

Two young Guernsey cows also for quick sale. Both sired by Imp. Polonious, a prize winner at the National Western Stock Show.

This is a good chance to get pure-bred breeding stock at low cost.

Also some Poland China and Duroc Jersey boars of July farrowing. Spring boars all sold.

Animal Husbandry Department
COLORADO AGRICULTURAL COLLEGE
FORT COLLINS, COLO.

I have a few extra good Big Type Poland China boar pigs ready for service, sired by the 800-lb. 2-year-old A Big Joe and Gilmore's Timm, out of sows weighing 600 to 800 lbs. Fall pigs now ready, either sex, priced to sell.
Also booking orders for sows and gilts sired by A Big Joe and Gilmore's Timm and bred to Mouw's Best Gerstdale, the best son of the $6,600 Gerstdale Jones. Sows to be delivered when safe in pig. Call or write.

GEO. R. GILMORE
Fort Morgan, Colo.
Mention Western Farm Life

HIGH-CLASS JERSEYS AND DUROCS

The yearling bull has gone, to a former customer. Now for a calf, not quite a year old, out of a Register of Merit cow, and by the great Count Majesty. His sons will soon be gone.
Have a couple of March boars, sired by a son of Grand Model and out of a daughter of Model Critic, that are extra good. The price, $50, will be raised Dec. 1st.
A. M. McCLENAHAN, Greeley, Colo.

30 DUROC-JERSEY BOARS AND GILTS 30
MAY AND JUNE FARROW
The big, long, prolific kind, sired by Colorado Golden Model and Colorado Good E Nuff. Can furnish pairs not related.
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MILKING SHORTHORNS
Duke Glenrose, grandson Rose Glenside, at head of herd. Address
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I have the largest 6-year-old jack west of the Missouri River for sale. Other bargains in Mammoth jacks and jennets.
Inspection Invited Satisfaction Guaranteed
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BARGAINS Percherons, Belgians, Shire, Suffolk, Clyde, Hackney, Great Coach Stallions, $450 and up. Good Jacks. One, two and three years' time given purchasers.
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TO GET THE

Genuine New Edison

AT THE

Old Prices

Here's your chance, and it's the last one! The very last announcement that will be made in this paper before the big increase in price of the New Edison.

Orders for the increase have come from Mr. Edison himself. High costs of materials and labor have made it necessary. Mr. Edison regrets the necessity of this price raise but conditions make it essential. So, if you want a New Edison now is the time to get it. Don't put it off.

Mr. Edison's Wonderful New Phonograph

Sent on Free Trial!

Read the Coupon Below! An astounding offer—the New Edison, Mr. Edison's great new phonograph with the new Diamond Stylus reproducer, and 12 brand new Blue Amberol Indestructible Records sent to you on **absolutely free trial. Send no money**—just fill out the coupon below and send it to us at once. We will send you the complete outfit immediately. No C. O. D. Entertain your family and friends with the latest song hits of the big cities. Laugh at the side-splitting minstrel shows. Hear anything from Grand Opera to Comic Vaudeville. Judge for yourself just how much this great phonograph would mean to your home. Decide if you can get along without it. After the trial in your own home, make up your mind. If you decide not to keep the outfit, send it back to us **at our expense.** But you must hurry if you want to take advantage of this offer.

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If you wish to keep Mr. Edison's superb new instrument after the free trial, send us only $1.00. Pay the balance of $35.90, which includes the small war tax of 90 cents, effective at once,—for complete outfit in easy payments of only $3.50 a month.

Think of it—a $1.00 payment, and a few dollars a month to get this outfit of Mr. Edison's new phonograph with the Diamond Stylus reproducer, the life-like music—the same Blue Amberol Records—all the musical results of the highest priced outfits. The *finest*, the *best* that money can buy at very much less than the price at which imitations of the Genuine New Edison are offered.

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This is Your Last Chance!

Prices Go Up Jan. 1

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Convince yourself first. Get the New Edison in your home on free trial. See what a wonderful instrument it is — how it brings the music of the world's greatest singers and players, the sweet, old time melodies, the jokes of the funniest vaudeville actors, all right into your parlor as if they were there **in person.** See for yourself how much you need the New Edison in your life. See how much happier it will make your home. Just fill out the coupon and send it in. No money down, no C. O. D. You pay us nothing unless you keep the outfit. Send it back if you wish **at our expense.** Or pay only $1.00 after the trial, and $3.50 a month until you have paid $36.90 Send the the coupon today.

F. K. Babson Edison Phonograph Distributors
4169 Edison Block, Chicago, Ill.
Canadian Office: 355 Portage Avenue, Winnipeg. Man.

No obligation to buy in sending this coupon; this is just an application for a Free Trial

F. K. BABSON, Edison Phonograph Dists., 4169 Edison Block, **Chicago, Ill.**

Dear Mr. Babson:—As per your offer, I should like to hear Mr. Edison's wonderful new style phonograph with the new Diamond Stylus reproducer in my own home on free trial. Also send me twelve records. If I decide to keep the outfit, I will have the privilege of the rock-bottom price of $36.00 (plus 90c war tax, to be included either with the first payment of $1.00 on your outfit, or with the first monthly payment, just as you prefer) direct from you on special terms. I merely agree to take the outfit promptly from the depot, pay the small freight or express charges, and if I do not find it thoroughly satisfactory, I reserve the right to return the outfit at once at your expense. Otherwise, I will send the first payment of $1.00 within forty-eight hours after the free trial or as soon as possible, in no case exceeding one week, and will make monthly payments thereafter of $3.50 for 10 months. The outfit is to remain your property until the last payment has been make.

My name ..... Address or R. F. D. No. .....

City ..... State ..... Ship by ..... Express

Shipping Point ..... Ship by ..... Occupation .....

Age ..... Married or single ..... If steadily employed at a salary please state .....

How long a resident in your neighborhood and your vicinity ..... If there is any possibility of changing your address during the next year, what will be your next address? .....

Western Farm Life

Denver, Colorado
Dec. 15, 1917

Save $1.00 or More—Now

Bargain Period Offer Extended to Midnight, December 31st

Notice
To All Subscribers of
Western Farm Life:

December 15, 1917.

To accommodate many readers who have asked for a few more days to take advantage of our **Twenty Day Bargain Offers,** I have decided to extend the period a short time—until midnight December 31st, we will accept your renewal subscription at the **Special Bargain Prices,** which are as follows:

Bargain Period Price Offer . . . { 2 Years $1.00 / 5 Years $2.00

Surely you can't resist such an offer as I make you at these bargain prices, for by extending your subscription two years, **you save $1.00** (just half); by extending your subscription now for five years, **you save $3.00** (over half).

You must, right now, really need at least one good Mountain States Agricultural magazine. WESTERN FARM LIFE will be worth as much, at least, for many years ahead—more, we firmly believe, as the years go by.

I wish all you good friends of WESTERN FARM LIFE could have seen our mail this last week or so,—letters with personal checks, letters with money orders and letters with currency came piling into our circulation department from every direction and on every train, taking advantage of the bargain period offers.

I want to tell you this re-affirming of faith in WESTERN FARM LIFE on the part of its subscribers who are renewing their subscriptions (many for five years) and thus pledging their co-operation for a number of years, has a good, wholesome effect on the paper and upon ourselves. Anyone can do better who has the backing—the faith of a loyal friend. We cannot personally acknowledge the many good letters received, but I want to take this opportunity to assure you that they are much appreciated. Would not such good letters as the following cheer and encourage anyone? They are good samples of letters we receive in every mail.

Western Farm Life:
Enclosed please find check for two dollars. I will send you some names for your paper, as I like it, as you gave Hulbert a shot that pleased me.—A. W. Fleck, Boulder, Colo.

Western Farm Life:
I herewith enclose my check for $1.00 for extension of my subscription to your valuable magazine. Accept my congratulations for the showing you are making and the "pep" and good judgment used in its general make-up. I am for Colorado, and especially El Paso County.—A. F. Cogswell, Calhan, Colo.

Western Farm Life:
Find enclosed my check for $2.00, payment for five years' subscription to WESTERN FARM LIFE as per your offer in the issue of December 1, 1917. Please date my subscription from May, 1917.—V. A. Weir, Padroni, Colo.

Western Farm Life:
I see your five-year offer and hasten to grab it, as I expect to be a subscriber to your paper as long as I live. Enclosed find check for $2.00. Please mark me up for five years longer.—E. E. Phillips, Hoehne, Colo.

WESTERN FARM LIFE is different from any other farm and livestock magazine. It is published in Colorado, our editors are all Western men who are familiar with Western conditions. Some one of them has been in almost every locality. They know the problems that stump you. They gather the experience of other Western farmers and stockmen, print it and thus show you the way around at least some of your troubles. Then there is the Free Service Bureau—if you are a subscriber you can write in for any information you want. If the editors don't know the solution they will find it for you.

Now, if you have not already sent your renewal, let me hear from you right away and thus make sure of my exceptional money saving offer. Your letter must be mailed between now and midnight December 31st. A dollar saved is a dollar made.

For your convenience, I am having enclosed in this issue of your magazine a return envelope; you will note that on the inside of the envelope flap there is provided an order blank that you can fill out—slip into the envelope your personal check, P. O. money order, or currency, seal securely and it will reach us safely.

Why not fix it up right away—**NOW** and have it all ready to mail?

With best wishes I am, Sincerely,

H. Johnston

Gen. Mgr., WESTERN FARM LIFE.

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WESTERN FARM LIFE

A Western Magazine for Western Farmers and Stockmen

Comprising Ranch and Range, Farmers Life and Fruit Journal, Trans-Mo. Farmer and Ranchman

Largest Circulation of Any Farm Magazine in the West

Volume XIX | DENVER, COLORADO, DECEMBER 15, 1917 | Number 24

Autumn Exposition and Training School for Farmers

WHAT THE EDITOR HEARD AND SAW AT COLORADO SPRINGS

LABOR shortage was the one thing emphasized by El Paso county farmers who exhibited at the au-mn exposition at Colorado Springs ie last week in November, and the ame story was told by many rural isitors who were questioned during ie two days the editor spent at the ir. Small farmers—that is, men ho operate only a quarter section, hich is small compared to the thou-nd acre ranches—will be able to do much next season as they did this ear, but many of the larger farm perators will be forced to reduce creage unless they see a chance of arvesting their crops next fall. These rmers undertook extraordinary tasks 1917, and the end of the season nds a good many of them facing op losses, delays in threshing and much work that they are not in-ined to take on as great a load in 18.

Many suggestions are being made as a solution of the labor problem. J. Bradshaw of Peyton thinks the aft army in training might be used help in the harvest fields next fall. riefly, his plan is this: We expect at thousands of men will be in train-g right along until the war ends. hy cannot some of these men be oved from the cantonments to the rms where help is needed? There e thousands of farm boys among em. They can be moved like troops the march, under military disci-ine, with the commissary following em. The farmers would gladly pay ages commensurate with the services ndered, and the government could pervise and feed the troops while ey are on the harvest march. The ork would benefit the men and be immense help to the farmer, espe-ally in the wheat-growing districts.

Others stressed the necessity for ex-sing from the schools until after ops are in, all boys able to do har-st labor. A specific case is that of H. Hopper, a successful potato ower at Eastonville. His only son attending high school at Colorado rings. The father had ten acres in tatoes and they yielded well, but be-use he did not have the services of boy for a period of a week he lost ,000 pounds of potatoes in e freeze of October 30th. saved 60,000 pounds of po-toes which he had to gath-alone, as there was no har-st labor available in his dis-ict at the time.

El Paso county had an ef-ctive volunteer farm labor ganization under direction the agricultural committee the Chamber of Commerce, hich sent out men from va-ous lines of business who uld spare the time. These en were paid by the day for eir work, and this help was eatly appreciated by the rmers. The plan, however, es not offer a complete so-tion of the labor problem. me farmers incline to the inion that the government ill be obliged to put farm bor on a conscription basis. thers see no hope of a solu-on, and have decided to plan eir 1918 acreage no larger an they can handle with such help as they may get from family or neighbors. The man who comes forward with a plan that will really solve the labor shortage will be doing his country a big service.

Field on the Paul-Murphin Ranch, Where the Early Six Weeks Potatoes Are Grown

Exhibits Were Fine

So much for the farmer's problems. Now as to the exhibits: These were much more numerous than at last winter's exposition. In fact, the Temple theater was so jammed with the displays that changes must be made before another fair is held in the building if the crowds are to be accommodated. The center space on the first floor was given up to agricultural products, mostly on the community plan, tho there were some individual exhibits, notably that of the Arobine ranch near Calhan and the Bradshaw ranch near Peyton, which covered almost as much space as community exhibits.

On the stage were the exhibits of the boys' and girls' garden and acre clubs, including Colorado Springs schools and the rural clubs. One of the features on the stage was a model farm designed by County Agent Lauck and built by his son, Clarence, who is handy at making models.

In a tent erected in the street adjoining the theater there was a livestock exhibit, including dairy cattle, hogs, sheep, horses and mules. This was limited as to numbers, but exceptionally fine as to class of stock, including some of the Spencer Penrose Holstein herd, purebred Duroc Jersey hogs from the Ivywild farm (J. W. Brauer) and fine stock from the Myron Stratton farm.

There was much interest in the showing of Holsteins recently brot in from Wisconsin for farmers in the Monument district. In this lot was C. S. Mangas' new herd sire, a prize winner, purchased from the herd of Emil Kittel, a well-known Wisconsin breeder. The last lot included two carloads of 50 head, fourteen of them registered, with five bulls in the lot. This was the second shipment bought this year for Monument dairy farmers under the direction of County Agent Lauck who, on his last trip to Wisconsin, was accompanied by Mr. Mangas as a representative of the purchasing farmers.

Eastonville again pulled down first prize in the community exhibit class, with five close competitors, namely Monument, Tructon, Ellicott and Buttes and Wigwam, the two last named being combined. It was hard for the judges to decide, because each exhibit had its excellent points and each was well arranged, Eastonville, however, making the finest mass showing of its diversified products. The prize was a grain grader and cleaner valued at $40.

Each community got its share of the prizes awarded for individual excellence of various products, the complete list being given at the conclusion of this article.

Paul's Little Potatoes

Many visitors were interested in the pile of small potatoes shown by W. H. Paul of Eastonville. Small potatoes are so rare in the Divide country that curiosity about them was only natural, especially as they were surrounded by tubers six or seven inches long and weighing all the way from half a pound to a pound and a half. The little fellows are known as the Early Six Weeks and they have been grown on the Paul-Murphin ranch for two seasons with splendid results. They are just the right size for cooking in the jackets. Besides the advantage of uniformity and no waste in cooking they are particularly early in maturing. While they do not mature in six weeks, as the name of the variety indicates, they were ready for the table this year in seventy days, having been planted May 10th and dug July 20th, which is early enough at an altitude of 7,000 feet.

Mr. Paul, who had charge of the Eastonville community exhibit, was kept busy answering questions about the Early Six Weeks, housewives being especially interested in the little spuds.

Potatoes are only a side-line on the Paul-Murphin ranch, which comprises 960 acres. The chief business is livestock production and the specialty in that line is purebred Shorthorns. The crops include potatoes, wheat, corn, beans, alfalfa, sweet clover, oats, barley and native hay. A large part of the ranch is in permanent pasture and 250 acres is in crop. The potatoes averaged 150 bushels per acre, the varieties including early and late Ohios, Russet Burbanks and the Early Six Weeks. All crops are grown by dry-farming methods.

Mr. Paul was raised a corn-belt farmer, having come to the state only three years ago. The change from 600 feet to 7,000 feet altitude and from a 35 to an 18 inch rainfall necessitated a radical change in the farming program to which he had been accustomed in Missouri. He likes the new conditions and is satisfied with results. There is only one point where the conditions are alike, he says, and that is in the amount of hard work necessary to succeed. He showed the palms of his hands as evidence that he isn't ranching on horseback.

Section of the Agricultural Exhibits at Colorado Springs

Bradshaw's Graham Flour

Getting the farm produce directly from the farmer to the consumer is being worked out in practice with the wheat grown on the J. M. Bradshaw ranch. Among the exhibits were several sacks of Graham

Turn to Page 18

Facts and Figures On the High Cost of Farming

WHAT THE FARMER IS DOING WITH HIS "ENORMOUS" WAR PROFITS

ALVIN T. STEINEL

THIS is not a calamity howl for the benefit of the farmer but a statement of facts to bear out assertions made in previous issues to the effect that the farmer suffers from the high cost of living to the same extent as the city wage earner. In truth he is harder hit than the average wage earner, for the reason that he feels the effects not only in buying the necessities of life but to an even greater extent in the purchase of farm machinery, draft animals, meat animals and additional feed for them. The wage earner, in many cases, has secured an advance in wages since the beginning of the war. Likewise the farmer gets more for his produce than he did before the war. If he did not he would be bankrupted. The business of farming would have to come to a standstill for lack of capital for renewal of equipment and for the performance of the seasonal operations of turning the ground and seeding a new crop.

Another point: the wage earner's increase may all go toward meeting higher cost of things the laborer consumes. The farmer must share his increased income with farm labor which, during the past season, has demanded outrageously high figures because the employing farmer was right up against the proposition of losing an extra big crop, grown at extra cost, in anticipation of extra prices, or paying floating labor its exhorbitant demands. He had to pay labor's price, with this important discrimination in the laborer's interest, namely: that the farmer fed him and housed him at his own (the farmer's) expense. The increase was all absorbed by the laborer for later spending when he got back to town. The farmer paid not only a higher wage but bore the expense of the higher cost of feeding the laborer.

In discussion of farming those unfamiliar with the inside of the business generalize to the effect that the farmer produces most of what he consumes. This is, unfortunately, not true. Modern conditions of living have driven the farmer out of the thrifty methods of his grandfather. He has fallen a victim to extravagant practices almost to the same extent as has the average city man. This statement may be modified to exclude the homesteader or the new settler on the lands of the West. He has usually been less extravagant because the business of developing a new farm has taken all his resources.

These habits of extravagant living cannot be changed in one season. They are not due alone to the general inclination of a prosperous nation to spend its substance "in riotous living," but often to the system that has forced itself on farmer and town dweller alike thru modern inventions which are developing a love of ease and pleasure that is not altogether a blessing.

For instance, the farmer finds it less laborious and perhaps more economical when the type of his operations is considered, to sell his pork on the hoof and bring back from town ham and bacon that was cured in Kansas City or Chicago, perhaps from hogs originally shipped in by him 500 to 1,200 miles a few months previous.

War prices will bring back many of the old practices that made living cheap for our grandfathers in the Mississippi valley or the eastern states. But that is another story.

We are dealing with the facts as they exist today and what are these facts in reference to the high cost of living on the farm, and the high cost of actual farming operations?

From farmers in a dozen different sections of Colorado the writer has received figures in the last few weeks that tell the same story—increases of forty to one hundred per cent in the cost of necessities. We will look at one report, which is typical of general conditions as reflected by all the reports:

READ SAM RUSSELL'S EXPERIENCES

I am a poor man living on a dry farm. I planted twenty acres of corn and only about a fourth of it came up and what came amounted to nothing. I planted five acres of beans with less result; they never came up. As it might be of some use to you to know how I got thru, I bought a crop of dry farming corn of a neighbor who was more fortunate than myself and cut it up and put it in the dry for winter use. The next was to provide for my own provisions. I knew a fellow who had a potato crop near Westcliffe, a distance of about 75 miles from here. I drove over to help him get his potatoes out and I got $2.50 a day for my work and extra when I used my team. I took my pay in potatoes at $1.25 per hundred pounds. This was 15 cents higher than the shippers were paying at that station at that time. This is about the same price the farmer got for his spuds before the war affected prices, when he could get flour at $2.50, sugar at 16 pounds for a dollar, lard at 15 cents a pound and compound for 10 cents. Now his flour costs him $6 to $7 per hundred pounds, he gets only 8 pounds of sugar for a dollar, lard costs him 50 cents, compound 35 to 40 cents, so you see the potato man has to give over 500 pounds of spuds for a hundred pounds of flour; at the same time potatoes were retailing in Pueblo for $3 per hundred pounds.

Many other things might be taken up to show you that the war is an opportunity for the grafters' harvest and not for the farmer. A few days ago I stopped to speak to a farmer who was unloading some corn at the mill and I asked him what he was getting for it. He said $2.10. Then I stepped into the mill office and heard a man ask what a sack of corn was worth and he was told $4. The corn had practically doubled in value just going thru the mill. I hope these few facts will be of some use to you.—Sam Russell, Pueblo county, Colo.

	Pre-War Prices	Present Prices
Flour	$3.40	$6.10
Sugar	$5.25	$8.25
Rice	10c	15c
Beans, navy	6c	12½c
Beans, Mexican	5c	10c
Bacon	25c	45c
Ham	25c	40c
Lard	12½c	35c
Butter, creamery	25c	52c
Canned tomatoes	10c	20c
Canned corn	10c	20c
Canned peas	15c	30c
Canned salmon	20c	80c
Dried apples, etc.	15c	80c
Prunes	12½c	25c
Soap	6 bars 25c	4 bars 25s
Men's clothing—		
Suits	$25	$30
Overalls	75c@$1	$1.50@$1.75
Women's garments—		
Coats	$35	$65
Suits	$30	$50
Men's work shoes	$2.50@$3	$3.50@$4.50
Women's shoes	$5	$8@$12
Cotton goods, yd.	10c	25c
Gasoline	11c@13c wholesale	27c@30c
Tires	.....	25 to 40% Advance
Auto accessories and repairs	.....	50% Advance
Lumber and building material	.....	25 to 60% Advance
Farm machinery	.....	About 40% Advance
Coal, on cars	$5@$7	$8.50
Corn	35c@50c bu.	$1 & upward
Prairie hay	$8	$20
Alfalfa	$6@$8	$15@$20
Cottoncake or meal	$34@$40	$50@$65 a ton
Labor	$1.50@$2.50 and board	$2.50@$5 and board
Harness	$40@$50	$65@$80

In looking over this list of articles the city man says: "Yes, this may all be true, but what do you mean by putting alfalfa and corn on the list? Don't the farmer raise these products? Should he not be credited instead of debited with the increase on these commodities?"

The city man forgets that the farmer himself is the largest buyer of alfalfa and corn. He may raise both hay and grain, but not nearly enough to supply his own demand, if he is a large feeder of sheep, cattle or hogs. The ideal condition is that of the farmer who grows most of his own food and feed, but this type of farmer is the exception.

Whoever heard of a farmer buying butter at the store? I have. These cases are not rare. Creamery butter is served at many a farm table. Not six months ago I was a guest at a hotel in a plains town where no butter was served. I asked for it and the waiter said: "There isn't a pound of butter in town, but the store expects a shipment from Denver tomorrow."

Across the street at the depot I saw a truckload of cream cans being deposited in a baggage car for shipment to the creamery. The town is an important cream shipping point, yet there wasn't a pound of butter to be had that day and I know that I could have driven out into the country and found rural households without a churn or a milk animal on the place. There are hundreds of farmers who are not dairying but make grain growing their principal business and who may keep only one or two cows, or may not have a cow on the place. This is inexcusable, but the condition exists.

The farmer buys bacon and ham. He shouldn't do it, but I am not trying to tell you what he should or should not do, but what he actually does. He buys dressed beef. Since I started to gather information for this article I got a letter from a farmer's wife in Boulder county. She says: "We sell beef and get eleven cents dressed or seven cents live weight and pay 18 cents a pound for the neck when we buy it back."

"That's a clear case of how the farmer gets it in the neck," was Governor Ammons' comment when I showed him that letter.

Why does not the farmer put up his own beef? It can be done, the best plan being the organization of community beef clubs, the members of which take turn about in butchering a beef animal and apportioning the beef among their membership. There are such clubs but they are few and far between. Most farmers live to themselves and this is particularly the case in sparsely settled sections of the West.

While the farmer neglects self interest in some respects most of the items above listed are such as every farmer must buy. Take coal for example. An interesting report comes from a farmer near Haswell in Kiowa county. He buys coal thru the Grange at carlot prices. Before the war he paid $5.50 a ton—Grange wholesale prices—while those not members of the Grange paid the dealer in Haswell $7.50 a ton. At present the Grange price is $6 and the dealers' price $8.25.

Out on the plains there is no wood and the farmer must buy coal. He has to haul it to the farm sometimes ten, again 30 to 60 miles, and the haulage must be added to the dealer's price before comparisons can fairly be drawn with fuel costs in the city.

Another farmer from Washington county says he paid $6.25 to $7.50 for coal on cars before the war, and on the 11th day of November, this year, he took home a ton that cost him $8.50 and he had to haul it 22 miles. That makes a ton of coal come pretty high. Ask the town coal man what he would charge for hauling 2,000 pounds 22 miles!

Gasoline cost is another item that hits the farmer hard. He has an auto; it is an absolute necessity on the farm. The tractor is becoming more common. Farmers buy their "gas" in 50-gallon tanks. They used to pay 11 to 13 cents a gallon and it costs 27 to 30 cents now.

A farm cannot be kept up without constant expenditures for lumber. There are sheds to build, barns to repair, and fences and gates to mend. Every day there is need of a two by four here or some siding there. Lumber used to cost $18 to $20 per thousand. It is now $30 to $35 for common grades.

Consider farm machinery and implements. Colorado farmers doubled their bean acreage last spring. That meant doubling the demand for bean cutters and threshers. Other crops also were increased. Every acre added means wear and tear and repairs on tools and implements, or new ones. What did they cost? One man writes that he has bought a grain binder, mower, hay rake, wagon, cultivator and disk harrow under war prices at 40 per cent over pre-war prices. Another bought a mower that was priced $52.50 two years ago and now costs him $75. Another has discovered an increase of 300 per cent in the price of window panes. He had to buy the glass or nail a shingle over the broken pane.

Overalls are a farm necessity as are work shoes, and both wear out quickly, under the constant use to which they are subjected. Three years ago overalls were bought at 75 cents to $1; now one farmer says they cost him $1.75 a pair, while another, over on the Western slope, is taxed $2.25 to $2.50 a pair. Work shoes used to cost $2.50 to $3 a pair; now $4.50 will hardly buy a pair. One man writes that his wife formerly bought goods for aprons and house dresses at 10 cents a yard and now the store is charging 20 to 25 cents for the same goods.

Farmers are patching up the old harness as long as possible, because ordinary sets, formerly costing $40 to $50 now cost $65 to $80. Harness and shoes are made from hides and the farmer who buys leather goods sometimes sells hides, but strange to relate, green hides have advanced only two cents a pound to the farmer—from 11 to 13 cents—and not 60 to 100 per cent, as in the case of the finished product.

For sugar, flour, rice, canned goods and other groceries see the list above, which is fairly representative. One more point before quoting some interesting letters: Colorado is one of the most important beet sugar states in the Union; the farmer grows the beets and buys the sugar, just as he grows the wheat and buys the flour. The beet grower has been in a more favorable situation than the wheat grower because he can usually see the sugar factory smokestack from his beet field, while the wheat grower is often a hundred miles from a flour mill. So while the grower once got only $4.50 to $5 a ton for beets he is asked to sign contracts in 1918 at an average price of $9 for beets running 16 per cent in sugar. Being close to the factory where the farmer could draw his own conclusions when he read of big dividends to stockholders, bonuses to factory employes and the like it is only natural that he should be let in on some of the increase in sugar values, because it costs a lot more to grow beets now than it did three or four years ago. Unfortunately the farmer cannot take the well meant advice of a Denver club woman and make his own sugar.

The wheat grower takes a government price of $2 a bushel (Chicago basis) for 1918 and if he gets a good crop this will give him about the same net profit as he got at $1 a bushel before the high cost of farming became effective, providing he will find labor at harvest time next summer.

There is still too great a spread between the price of flour and the price the farmer gets for his wheat. The consumer—and that includes the farmer—is right in demanding an adjustment of this difference by a cut in the miller's profits.

These facts and figures are given to show that charges of profiteering made against the farmers as a class are absolutely unjustified. Much more could

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Marketing Colorado Five Million Dollar Spud Crop

GROWERS WARNED TO KEEP CROP MOVING OR TAKE LOSSES

STUART L. SWEET, *Market Assistant*
Colorado Division, U. S. Office of Markets

COLORADO this year has the largest potato crop in its history. Over 63,000 acros were plantod from which 8,800,000 bushols have been harvosted. In terms of car lots—30,000 pounds minimum—this would mean approximately 15,000 cars for the stato, for which the growers will receive over $5,000,000.

In view of the increasod production a comparison of the potato districts for 1916 and 1917 is of interest.

POTATOES—COLORADO, 1917

District	Acreage	Aver. per Acre	Estimated Yield	*Estimated Cars
Gunnison Valley	6,000	200 bu.	1,200,000 bu.	2,000
San Luis Valley	10,500	210 bu.	2,205,000 bu.	3,860
Carbondale and Grand Valley	4,500	225 bu.	1,012,500 bu.	1,700
Eagle	1,400	200 bu.	280,000 bu.	460
Greeley	16,000	175 bu.	2,800,000 bu.	4,750
Scattered	25,000	55 bu.	1,325,000 bu.	†2,230
	63,400		8,822,500 bu.	15,000
Less frost loss Est. 15%			1,323,375	
			7,499,125 bu.	

*Estimated carloads after Frost Loss has been deducted.
†This yield is from average ½ acre plots on farms of state grown for home consumption and only a very small per cent ever reaches the market.

POTATOES—COLORADO, 1916

District	Acreage	Estimated Yield	Cars Shipped
Gunnison Valley	5,500	1,089,000 bu.	1,800
San Luis Valley	6,500	1,331,000 bu.	2,200
Carbondale and Grand Valley	4,200	840,000 bu.	1,175
Eagle	1,300	260,000 bu.	450
Greeley	14,000	2,450,000 bu.	4,800
Scattered	18,500	930,000 bu.	194
	50,000	6,900,000 bu.	10,619

From the 1916 crop, 10,619 cars of potatoes were shipped from Colorado points. It will be noted from the table that Greeley and San Luis are the two largest districts, with the Gunnison Valley ranking third, Carbondale and Grand Valley following.

This year the Gunnison, San Luis and Greeley districts have greatly increased their acreage. The table shows that the San Luis Valley made the greatest response to the government's request for increased production. An additional 4,000 acres were planted in that district over 1916. The Greeley district is now up to 16,000 acres, an increase of 2,000 acres over the preceding year.

The average yields per acre in this state are exceptional when it is considered that the average for the United States is less than 100 bushels per acre. Were it not for the increased planting, however, thruout the state, the total would have been less than the yield of 1916, due to a short season. In every district, growers were about a month late in getting potatoes into the ground, and the frost this year came from one to three weeks earlier than last.

The table for 1917 shows the estimated total yield of the different districts but it should be borne in mind that the estimate of the carload shipments has been made after the frost loss for this season was deducted. During the latter part of October a heavy freeze caused a loss of at least 15 per cent average for the state. The Greeley and Carbondale districts were more severely hit than the others, San Luis Valley and Eagle getting off with comparatively little loss. The frost damaged at least 1,323,000 bushels. Valued at 1 cent a pound—the lowest price paid to the producers—this represents a loss of over $1,000,000.

The "scattered acreage" of 25,000 acres is remarkable. This is composed of the small plots which have been planted on thousands of farms thruout the state for home consumption. It includes the vacant lots planted in the different cities and towns of the state. The increase over 1916 was 6,500 acres. The average yield was of course small, due to the poor seed and little care which the patches received. In the aggregate, these small plots would amount to 2,000 cars, but less than 1 per cent ever reaches the market.

At first glance, it seems improbable that Colorado would have 5,000 more cars than she had in 1916. It is not to be assumed that she would market one-half again as many as she did last year, but 15,000 cars is a conservative estimate of the total number produced. After deducting the 2,000 cars representing the "scattered acreage," the 13,000 cars remaining represents the probable number that will be marketed from Colorado during the present season. This means an increase of 2,500 cars over last year's shipments, and typifies the patriotic response which Colorado farmers have made in this and other crops to the nation's call for more food.

The reports of the United States Bureau of Markets show that up to December 1st, Colorado has shipped 5,300 cars as compared with 4,800 to a corresponding date last year. The increase of 500 cars over last year was made during the early part of the season. Recently the car movement has declined rapidly. The shipment of 221 cars last week, an increase of 22 cars over a corresponding week last year, represents a decrease of 147 cars over the previous week of this year. This shows the declining tendency of the market. Shipping points have been unsettled during the last few weeks. At some points growers were not ready to sell at the low price which ruled. In other sections buyers were afraid of the market and were not willing to take the stock offered. Under these conditions, the car shortage was less of a factor than during the earlier part of the season. This declining tendency of car lot movements is representative of the entire United States. At Colorado points buyers were reluctant to pay more than $1.20 to $1.35 per hundred pounds for Whites or Reds. The market has been dull at the shipping points and the distributing centers.

A danger exists from this condition, which may cause further loss before the shipping season is over. The railroad reports show that from 350 to 500 cars of potatoes are being shipped each day, as compared with 1,000 to 1,200 at this time last year. Three factors bring about this condition. First, the great amount of "scattered acreage" on small plots which have been planted thruout the country and which have produced a few sacks which are being consumed in the home this fall; second, the car shortage situation which has embarrassed the railroads thruout the United States; third, the frosted stock which has been put on the market, lowering prices and cutting down consumption.

Investigations by the Colorado Office of Markets among the retailers and wholesalers in Denver have shown that the frosted stock is being resorted by the wholesaler and again by the retailer before it reaches the consumer. Many of the retailers are refusing to deliver 100-pound sacks. The grower is damaging his own market. He is being paid for stuff that ought not to be sold. What about the good stock that he has in his cellars? It should be remembered that during the spring of 1917, when the potato shortage existed that brought the prices to $4.00, $5.00 and $6.00 per 100 pounds, thousands of families learned to substitute beans and rice for potatoes. The poor stuff on the market now is rapidly cultivating that habit again and unless the movement of potatoes is steady from now until the season closes, there will be a glut in the early spring months, with the corresponding low prices.

Invariably where frost free potatoes have been offered, a price of from 15 cents to 25 cents per 100 pounds above the market quotation has been paid to the grower. These frost free cars are quickly taken up by the wholesalers and are easily disposed of by the retailer. The growers will be dollars and cents ahead at the end of the season if they market three cars free from frost, instead of five cars with some field frosted stuff in the sacks.

A problem is before the growers which needs their co-operation for a satisfactory solution. The price and movement of potatoes from Colorado has decreased during the last month. The cause has been the great quantity of poor, ungraded, frosted stuff which has been shipped. The poor stuff on the consumer's table has disgusted him and he has cut down his orders from the retailer. The retailer with frosted stock spoiling on his hands has cut down his orders from the wholesaler. The wholesaler having stood the expense of resorting, is obliged to resort again in order to hold some of the stuff which he has on hand. This makes him cautious and he in turn curtails his orders from the buyers in the producing sections. A situation confronts the growers today, of a greatly increased production with declining market and movement.

Standardized quality in any food product creates and maintains a ready market. If a glut with bottom prices is to be prevented in February or March, a uniform movement of cars from the potato sections of the state must be maintained, and this is only possible by the growers shipping graded, frost free potatoes thruout the remainder of the season.

A Comparison of Mule and Tractor Power

Upper Picture (Photo by Courtesy of The Wiggins Courier): Shows 21 Tons of Wheat Being Hauled by Tractor to Wiggins, Colo., From the E. E. Bidwell Farm
Lower Picture: E. G. Stonehocker Taking an Eight-mule Load of 95 Bushels of Wheat to Market Over Sandy Roads

Coming down the road in southern Morgan county the editor, Fording along with County Agriculturist C. G. McCord, met a fine eight-mule hitch pulling a load of wheat to market. They were splendid animals, well bred and well fed and their driver and owner, E. G. Stonehocker, was proud of them.

"Why the eight mules for one wagon load?" we asked.

"Had a range of sand hills to cross and needed pulling power," was the answer.

The load on the wagon was 95 bushels of Turkey red that made 12 bushels to the acre.

The other picture tells a different story. It shows 21 tons of wheat delivered in one load by a tractor at Wiggins, Colo. This was the second big load made by tractor delivery from the farm of E. E. Bidwell. The tractor traveled right along with its big load, minding it no more than Mr. Stonehocker's eight-mule team minded their load of less than three tons.

This looks like a boost for the tractor, but the picture doesn't suggest the whole story. Stonehocker's mules brought their load over sandy roads that the tractor never could have negotiated, which goes to show that we need both the mules and the tractors, and most of all we need good roads.

To Increase Beet Acreage

A sliding scale varying from $8.37½ to $9.75 per ton, according to sugar content, is the price to be paid by the Great Western Sugar company for beets of the 1918 crop. Announcement to that effect was made late in October. According to the new scale the average price for 16 per cent beets will be $9 a ton, an advance over 1917 of $2.25.

An urgent appeal for increasod acreage of beets comes from the United States Food Administration, in the following communication:

One of the most vital problems confronting this nation is that of procuring sufficient sugar to meet the requirements of our people and of the allied nations fighting our common battle. The production of cane sugar in this hemisphere can and will be increased to a limited degree. But we must rely upon the farmers in sugar beet producing sections of the country for a part of the needed supply. I therefore earnestly appeal to every farmer, so situated, to come to his country's aid in this hour of need. Without the co-operation of the American beet grower our task will be very difficult and our ability to respond to the calls to be made upon us for this very essential commodity will be curtailed. It is at least the duty of every beet grower to maintain in 1918 his normal acreage of sugar beets. It is his privilege to increase that acreage to the extent that a well balanced production of crops will permit, and in this manner effectively demonstrate his patriotism.

HERBERT HOOVER.

Anyway, cottontails can serve the nation better in rabbit pie than by gnawing fruit trees.

Making Ensilage from Potatoes

UTILIZATION OF SMALL SPUDS IN FEEDING

DR. H. E. HORTON, Agriculturist American Steel and Wire Co.

FOR generations Denmark, the home of efficient bacon production, has made large use of potatoes, and shown us the way to use this feed to our great advantage. A way to keep potatoes over the year has stood in the way of developing this valuable feed. In very recent time Dr. Round, of the U. S. Department of Agriculture, has worked out a method of preserving potatoes in the form of silage. This discovery is of tremendous importance, for it will stock up northern and western farms and steady the marketing of the potato crop.

Under normal conditions ten to twelve million bushels of potatoes are lost by rotting, and in exceptional years this amount easily may reach 50,000,000 bushels. This year large quantities of potatoes were frozen in the ground. Facilities for making potato ensilage would prevent large losses of this kind.

The successful making of potato ensilage hinges on the use of an organism of microscopic size known as the lactic acid organism. Clean ground potatoes, inoculated with this organism, furnish a sure means of saving the potato and producing a palatable, nutritive ensilage which may be fed to the hogs and cattle to advantage.

In the following will be found Dr. Round's description of the preparation of the lactic acid organism and the making of potato ensilage.

The lactic acid organism is prepared by fermenting corn meal.

If equal parts by weight of corn meal and water at 100 degrees F. are thoroly mixed and then packed and tamped into a perfectly clean, water-tight receptacle, such as a glass jar, crock, or barrel and set in a warm place, in forty-eight hours the corn meal will have undergone a lactic acid fermentation and will contain enormous numbers of lactic acid organisms in practically pure culture. The surface of this meal, after it is tamped into the water-tight receptable, should be covered as tightly as possible with boards and a wet cloth—both absolutely clean—in order to keep away as much of the air as possible. This type of starter should be used as soon as it becomes sour to the taste. If kept at a temperature between 80 degrees and 90 degrees F., it is ready for use in about two or three days.

In our work the potatoes after grinding are put immediately into water-tight receptacles, such as barrels, tanks, or large vats, along with about 2 per cent of corn meal sprinkled in among the ground potatoes. The mixture is then tamped down, covered to a depth of several inches with straw, corn-stalks or leaves, and then fitted with a board cover, which is weighted down with stones.

An air-tight covering is necessary in order to prevent decomposition on the surface of the fermenting material. The weight of the stones should be sufficient to bring the juice just over the potatoes, but it is desirable to keep the upper surface of the straw and the board covering dry, if possible. This can be accomplished by the proper adjustment of the stones.

In our work in which the covering is adjusted in this manner, there is no loss whatever of the fermented potatoes. Fermentation begins at once and if the weather is warm, gas bubbles appear within 24 hours and for some days considerable pressure is developed, which necessitates the addition of heavy weights to hold the potatoes down.

After a few days the gas formation slows down and the mass settles somewhat, but the fermentation is not complete until the end of the third week or longer, depending on he temperature. In warm weather the fermentation is complete in ten days.

Summary

1. The use of 2 per cent to 5 per cent of corn meal mixed with crushed potatoes insures an acid fermentation which converts the potatoes into silage.
2. This work may be done upon any scale. If reasonable care is used, losses should be negligible.
3. The potatoes should first be washed, and then crushed by passing them thru an apple grater which has been modified by substituting rows of blunt spikes for the grater knives.
4. The fermentation requires a tight receptacle which may be a barrel, a vat, a pit, or a silo, but must retain the potato juice.
5. The upper surface of the crushed potato should first be covered to a depth of several inches with an obsorbent fibrous substance such as straw, corn-stalks, or leaves, then closely fitted with a wooden cover weighted down by stones until the surface of the potatoes is barely covered by juice. The top of the straw and of the board cover should be kept dry.
6. Fermentation begins at once. With the evolution of gas, considerable pressure develops which should be controlled by extra weights. After a few days this pressure disappears. Acid fermentation continues, however, for two or three weeks. As in other fermentations the length of time necessary is directly dependent on the temperature.
7. The resulting potato silage is refreshingly acid in flavor, free from any putrid odors, and of about the consistency and appearance of the original crushed potato.
8. Potato silage is eaten freely by cattle and somewhat less readily at first by hogs, altho they soon learn to eat it.

Watch the Thresher

If anything is worth doing at all, why not do it right? When the thresher threshes for the farmer he is always in a hurry to get thru. Why? To get to the next job; to get ahead of his competitor and get thru what is usually a hot, mean, dirty job and real hard work for most of the hands.

Almost without exception, much grain goes over the elevator thru improper speeding of the separator. Grain at present prices is too valuable to go into the straw stack. It has been shown that it pays to rethresh our straw stacks — an unnecessary expense combined with unnecessary work.

Another important thing, if progressive farmers (as they should) put back on the soil straw not used for bedding or for the purpose of making manure, they will, in poorly threshed grain, sow on their wheat land perhaps some rye or oats, thereby causing their wheat to grade low, with a consequent loss of cash. Moral: Watch the thresher.—Vernon T. Cooke.

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Garden Peas at 8,000 Feet

PROVE GOOD CROP ON MOUNTAIN FARMS

GORDON KENT

I HAVE always advocated garden peas as a good paying cash crop for mountain farmers, but it is hard to get the exact figures on a crop that is harvested for three to six weeks. So I am glad to pass on the experience of a neighbor with the pea crop of 1917.

Mr. H. McReynolds of Black Gulch, near Pinecliff, Colo., planted six pounds of Dwarf Telephone and American Wonder. The seed cost him $1.35, including postage. He planted them as early as he dared in the spring and his pea patch is 8,200 feet elevation.

He sold his peas to summer visitors at Pinecliff, bringing peas each day as ordered, and delivering them each morning before going to work. He received 30 cents a gallon. During the season he sold sixty-two gallons, bringing him $18.60: About ten gallons were used at home. Twenty-one dollars' worth of peas from less than a dollar and a half's worth of seed looks like pretty good business to Mr. McReynolds and he intends next year to plant peas as a cash crop on a larger scale. Should the local resort prove unable to take all he produces he can ship the surplus to Denver and get 8, 9 or 10 cents a pound.

Nor is this all the story, for the vines are cured for hay and peas being a legume, the land they grow on is improved. The climate of the high altitude suits the pea perfectly if we may judge by the rich flavor and intense sweetness it attains. The season is none too long for the taller varieties and the seed must go into the ground early; as soon as possible after the first of May.

The great thing to look out for is to plant the peas in a soil that suits them. In a very poor, sandy or gravelly soil the vines will not be large enough to bear a maximum crop. In a black, rich bottom soil the peas will run to vine with few pods and no disposition to fill even these few before the mid-September frost gets them The richer the ground the later the peas mature. A sunny slope of sandy loam gives the best results. A sour soil wont produce a pea.

Support the vines. If they trail on the ground they form a crumply, matted mass. The job of hunting peas in this tangle is a slow and discouraging one. Many are missed and the vines themselves resent it and do not bear so well.

"Brushing" peas may be all right for the home garden, but becomes impracticable for larger areas. In a pea patch last season I saw twelve rows of Gradus peas, 300 feet long, with stakes three feet high and set every twenty feet along each row. Strung taut from end to end and supported by these stakes were four or five cotton strings of good grade. The strings were not wound around the stakes or held by staples, but were given a turn or two around small nails driven into the stakes. When a string slackened another turn or two around the nail made it taut again. This is the best method I have seen. The vines stand erect and the pods are accessible to both eye and hand.

The distance between rows should be varied according to the habits of the kind of pea grown. For tall Telephones four feet between rows is none too much. Three feet is sufficient between rows of Gradus, and about two feet between rows of dwarf varieties. The idea is to avoid tangling, to have a clear thorofare for the pickers and to give the vines plenty of sunshine so that they will mature before frost.

Bank Makes Dairy Loans

Platteville.—The officers of the Farmers State bank of Platteville have placed their institution squarely behind a definite movement to build up the dairy industry in the vicinity of Platteville.

M. M. Ewing, cashier of the bank, is authority for the statement that the bank will place 500 good dairy cows in the hands of Platteville farmers.

The bank officers approve the selection of cows by the farmer and take a mortgage on the cows and the increase in the herd. When the farmer receives his milk check from the Colorado Condensed Milk company 50 per cent goes to the bank as payment on the cows and 50 per cent goes either on to the bank account of the farmer or into his pocketbook, as he prefers.

To illustrate the workings of the plan. Last Saturday morning the bank placed ten dairy cows in the hands of a farmer at the cost of $800 for the ten cows and three calves. The bank received a chattel mortgage on the stock and will also receive the monthly milk check from the condensary company.

The cows will earn an average of about $10 a month each, or a total of $80 a month for the herd. At the end of the year the farmer will have received about $480 as his share of the milk checks and will have a credit of $480 on the bank's mortgage of $800 on his cows, which will thus be reduced to $320. He will also have the increase of his herd, which with average luck should give him five heifer calves for the herd and five veal calves for the butcher. In the second year the farmer will be away out of debt and will have a fine herd of cattle barring unforeseen accidents. Of course the farmer pays the customary rate of interest on his dairy loan as long as it is outstanding.—Greeley Tribune.

Comfortable barns keep dairy cows warm far more cheaply than high priced feed.

The best way to take care of our big potato crop is to eat it. Then we can send more meat and wheat to our own and the Allied armies.

The Paper for This Country

Western Farm Life: I think WESTERN FARM LIFE is just the paper for this part of the country; wouldn't be without it.—L. C. Moon, Ft. Morgan, Colo.

SEE THE "G" Feed Grinder First

Before you buy *any* feed grinder see the Fairbanks-Morse Type "G."

Note its large capacity—light running—large steel hopper—ball thrust bearing—self-aligning grinding plates.

These and other important features will convince you that the Type "G" is the feed grinder for your work.

Your dealer sells it because he knows it will give you real service and satisfaction.

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Invest in One of These!

WHEN corn was selling for 50 cents a bushel, one of our dealers made this offer to a skeptical farmer: "Use this manure spreader to top-dress 20 acres of your 40-acre corn field, putting on eight loads to the acre. Leave the other 20 unmanured as you meant to do with the whole 40. I will take the difference in the yield between the two 20's for the spreader." The farmer agreed, thinking to get his spreader at a low price.

The 20 on which he used the machine produced 512 bushels more than the other 20. He paid the dealer $256.00 for the spreader—a great deal more than its present selling price. Today, higher prices would make that difference about three times $256.00!

You simply cannot afford to be without a spreader when it will pay for itself like that. Hand spreading is out of the question. You want the manure pulverized and spread evenly, not dumped out in big lumps unevenly.

Now that we have added the New No. 8 Spiral Wide Spreader to the Low Corn King and Low Cloverleaf lines, we are in a position to suit any farmer. The No. 8 machines are for the average small farm, very light draft, narrow boxes, spiral wide spread (regular). Our big No. 6 machines—Corn King, Cloverleaf and 20th Century—are "whales for work", easy handling and loading, steel construction, light draft. With the No. 6 spreaders you may have the efficient disk wide spread (regular) or the new spiral wide spread (special).

Here is a spreader for every farm. This year, of all years, you need one. Write us for full information.

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(Incorporated)

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A Carefully Made and Proven Preventive

Originated at Kansas Agricultural College by members of this company and made under Government license. Every dose guaranteed up to standard. Over a quarter of a million cattle immunized with one treatment, with the record to date standing 100 per cent. Read what the following well-known stockmen have to say about the KANSAS GERM FREE FLUID VACCINE:

This spring I was losing a yearling every few days out of a bunch of about 400 that had been twice vaccinated with the Government; and then I used your vaccine and have not lost a single yearling since, altho they continued to run in the same pastures where the others had died.—FIELD BOHART, Colorado Springs, Colo.

We used your vaccine on about 2,000 of our calves last December with the most satisfactory results. So far as we know, we have not lost a calf from blackleg since they were vaccinated for the first time in the history of our company.—H. H. TOMPKINS, JR., Pres. The Tompkins Cattle Co., Denver, Colo.

This is only two of hundreds of letters we have from stockmen and farmers who have used KANSAS GERM FREE FLUID VACCINE.

We tell you all about this vaccine and how to get it in our booklet, "No More Blackleg." Write and ask for one of these booklets. They are free.

The Kansas Blackleg Serum Co.
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coming to farmers from the rich wheat fields of **Western Canada.** Where you can **buy good farm land at $15. to $30. per acre** and raise from **20 to 45 bushels of $2. wheat to the acre** it's easy to make money. Canada offers in her provinces of Manitoba, Saskatchewan and Alberta

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Canadian Government Agent.

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Our Cover Picture

"The Trail to Lake Odessa in Winter," is the title of our Christmas cover picture. The photographer, Wiswall, caught this view in Estes Park (Rocky Mountain National park), a few hours' auto ride from Denver. This picture was made for the Denver Tourist bureau in its campaign to lure vacationists to one of the most beautiful spots in the world. The mountains have a beauty of their own that varies with the seasons. Few are privileged to see them in the glory of their winter dress, so charmingly portrayed by the camera.

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A Christmas Thot

Undisturbed by the turmoil of the world war, the stately spruces guarding the gateway to Lake Odessa typify the Christmas spirit of "on earth peace, good will toward men." In our man-made world there is strife and hunger and sorrow; in the world of nature there is peace and plenty. Winter's snows cover the bleak scars in the granite that tell of a time when all nature was in an upheaval as is the man-made world today. And as everlasting peace has settled upon the mountains and draped them in the restful green of summer and the white purity of winter, so there is a promise for humankind as sure as the eternal hills that the birth of the Bethlehem babe was n t a mockery, but the sign in the heaven of human hopes that there is a Trail to Happiness and a Road to Peace.

When weary of war within ourselves and without let us look to the hills, "from whence cometh our help." In this Christmas season more than any other Christmas in the memory of man, have we need for consecration to our country's cause and to the service of humanity, remembering that He whose advent all Christendom now observes came to live, to die and to live again for all men of all times.

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The Livestock Show

There will be a conference on livestock problems at the National Western stock show the week of January 19 to 26th. Efforts are being made to get the attendance of Herbert C. Hoover, United States Food Administrator, or one of his authorized representatives capable of dealing specifically with the livestock problem, as it confronts the producer. Further details concerning the conference will be given in the next issue.

Another matter of interest to the farmer in connection with the stock show will be the patriotic features to be added to the evening horse show programs. At the suggestion of ex-Governor Ammons there is to be a competitive drill in which the crack teams of the Colorado State Grange are to meet some of the city teams. Every farmer, whether he is a member of the Grange or not, should be present during these drills to cheer the rural teams on to victory. The Grange can put on something of an eye opener to the city folks in that line.

Another new feature will be an exhibit by the Boy's and Girl's clubs of Colorado. The youngsters will show their elders what can be accomplished by scientific methods.

It will be a decidedly worth while week for farmers in every line.

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One Shipload a Week

The farmer is vitally affected by the war from every conceivable angle. We have heard until we are tired of it that the war cannot be won without the farmer's aid in producing foodstuffs; we are all painfully aware of the struggle the farmer has made against a depleted labor supply and increased costs to keep food production at a maximum, therefore it is interesting to consider the question from another side. What if the United States had complied with Germany's offer of the "privilege" of sending one specially marked American ship each week thru the barred submarine zone on a guaranty that this weekly boat would pass thru unmolested?

A moment's thot concerning that offer shows it to have been merely a bluff. Our exports of farm products to Europe for the fiscal year ending June 30, 1913, amounted to $1,123,651,985. This included meat animals, dairy products, packing house products, poultry and eggs, cotton, fruits, grains and grain products, oil cake, vegetable oils and tobacco. The cotton alone, representing a value of over $500,000,000, would require more than 900 ship cargoes to carry it across the water. There was of wheat 91,602,974 bushels which would require a thousand ships for transport. Just how much of our export trade would have remained with one ship a week to transport farm products to European ports is readily apparent.

Commenting on Germany's attempt to dictate to us the exact amount of foreign trade that would be allowed us on the high seas, Clarence Ousley, Assistant Secretary of Agriculture, says: "If we had acquiesced in the limitation of one ship a week we would have conceded the right of Germany to regulate our exports and imports, as she might see fit, now or hereafter. We had the choice of submitting to that dictation or fighting to maintain our right to sell and buy wherever we might sell and buy to advantage. It is inconceivable that an American citizen, regardless of his material interests, could yield to such dictation by a foreign power, but on the low plane of material interests we had to fight Germany or cease to be a nation of prosperous producers and become a nation of peons to Prussian autocracy."

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Economize on Fuel

The only safe plan for all of us these days is to economize in everything. The latest campaign for saving is in the line of fuel. Increased demand for coal due to war activities and overtaxing of transportation facilities are the two factors that have seriously shortened the supply of coal. Attempts of the coal interests, both operator and dealer, to take advantage of this situation by gouging the public are receiving attention from the Fuel Administration. In the meantime the consumer has only one card to play and that is to use as little coal as possible. In the mountain districts the fuel problem is easy of solution, for timber is plentiful. On the plains the farmer has no satisfactory substitute and he must use coal. Oil stoves are perhaps of some help.

Suggestions for fuel saving include one good rule, namely, that 68 degrees is the healthful heat. Most houses are kept at too high a temperature in winter. Get a thermometer and see that the indoor atmosphere is held at the right temperature; get accustomed to a cooler house. Close off unused rooms. Use weatherstrip and storm doors and windows. All of these suggestions are good at any time and particularly in relation to the fuel problem, because they save money for the householder and cut the demand for coal.

One point needs to be emphasized for our prairie farmers. Don't burn "cow chips." Better chill a little than to destroy valuable fertilizer.

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Order Implements Now

There has been no improvement in the implement situation and no change for the better is likely so long as the war lasts. There is only one thing for the farmer who needs new implements to do and that is to order immediately. Do not wait till after the first of the year; do not wait a day longer than absolutely necessary. Manufacturers are allowed only sufficient steel to fill actual orders—or so much of it as can be spared from the manufacture of ships and munitions. Orders cannot be anticipated and farmers who fail to place orders will find themselves without the machinery and implements needed for next fall's harvest if they wait. Naturally every careful farmer will do the best he can to put present equipment in good repair for another season's use and save ordering new if he can get along. But with the demand for increased acreage of food and feed crops more equipment is essential. The farmer who orders now insures himself against a harvest loss thru failure of equipment next fall.

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Farm Loan Rate Advance

An increase in the rate on federal farm loans is announced from Washington, the new rate being 5½ per cent. This advance of one-half of one per cent is in line with the general upward trend of interest rates, due to war demands for money. Federal farm loan bonds, thru the sale of which money is provided for lending on farm mortgages, have borne 4½ per cent, and it is anticipated that there will be an increase in this rate to correspond with the increase exacted on loans. About $30,000,000 has been placed with farmers thru the federal land banks in the last six months and applications for $300,000,000 are pending. In order to meet this demand a more attractive rate on the bonds was deemed necessary. The increase will not affect loans already approved, even tho many of these loans are not yet actually completed. The federal farm loan act provides for a maximum rate of 6 per cent, beyond which the farm loan board cannot go without the authority of an amendment by congress.

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Club Members' War Pledge

Members of boy's and girl's agricultural clubs in Colorado are signing pledge cards to give one-tenth of the net profit of their season's operations to the relief of suffering in war-stricken Europe. The letter sent out by the state leader, W. E. Vaplon, has met with a prompt and willing response on the part of hundreds of boys and girls who, during the coming spring and summer will raise pigs or chickens, grow an acre of corn, potatoes, beans, or a garden plot, or take part in sewing, cooking and canning club work. Mr. Vaplon's letter follows:

Dear Club Member:

None of our club members are old enough to take active part in the great war; few are old enough to have a part in any of the industrial activities directly connected with the war; many have not had an opportunity to do their hit, but we are certain that in our club membership there are no slackers. Here is a way in which every one can do something for his country.

More soldiers are prisoners of war in Europe than there are people in the largest city of the world; these men are all underfed and those in some war prisons are actually starving to death. Many of them are wounded and because they are so poorly nourished their wounds will not heal. More women than there are prisoners of war are left widows and therefore have to support themselves and their children. Of course there is not profitable work for them all, and the suffering caused by lack of food, clothing, and suitable shelter is terrible. Nobody knows how many people have died because of these awful conditions, but surely many times as many as there are people living in all Colorado. Here the sun shines most of the time; there is plenty of coal and wood for fuel, plenty of food, plenty of clothing; never have there been such bountiful crops nor such good prices; never so much demand for labor, so that everyone who wishes and is able-bodied can find work. Because of the want on the one hand, and the plenty on the other, we want our boys and girls to give one-tenth (1-10) of the money they may be able to make in club work during the year 1918 to the relief of the suffering caused by the war, especially for the relief of the starving children. A great deal of government and state money will be spent to promote club work in Colorado during the next year; a great deal of help will be given our boys and girls in their work. We feel sure they want to show their appreciation by lending their aid to others.

You will notice by the card that only one-tenth of the net profit is pledged to this work; for instance, if a member produce $12.00 worth of vegetables and it cost $4.00 to produce them, the profit would be $8.00 and the member would give one-tenth or 80 cents. A dollar's worth of food furnished at the right time may save the life of a boy or girl; no amount is too small; there will be more very small donations than large ones.

How are the sewing club members going to get into this?

1. Make an apron, nightgown or other garment to be sent to a needy girl. This would be as acceptable as food or money. 2. Enter a garden or poultry club for the purpose of making some money. 3. Help in Red Cross work. 4. Send one-tenth of the value of garments they are taught to make. 5. Sew for others. 6. Sell their articles at bazaars.

What can cooking club members do?

1. Give entertainments at which their cooking is sold. 2. Cook special dishes for some lonely "hatch" who does his own cooking. 3. Help neighbors with their work for pay.

Every one can do something; every one wants to do all he can. Won't you talk this over with mother and father and sign the pledge card? But we want the enrollment card even if you feel you cannot sign the pledge card. We want all pledges paid, if possible, by December 1, 1918, that the money and garments may go as a Christmas present.

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The High Cost of Bean Growing

The cost of growing pinto beans is a live subject these days and it is safe to say that hundreds of farmers will next season keep books on this and other crops. This is no time to indulge in guesses and estimates. Interesting figures come from County Agriculturist Charles E. Smith of Las Animas county, Colo., in a recent report made by him to State Leader C. E. Lovett, as follows:

"Attended meeting of the Farm Bureau board of directors and bean growers of the Sunflower Valley. Among other things a report was read at this meeting showing that the cost of growing beans on dry land averages from $12 to $15 per acre, with a yield this year of 200 pounds. This makes a cost per pound of six or seven cents. This is more than the Trinidad market is now paying. A report from 260 acres of irrigated beans in the Sunflower Valley showed an average cost of production as follows:

Plowing (mostly two times..	$12.40	
Harrowing	2.76	
Disking	1.70	
Leveling	2.17	
Ditching	.32	
Planting	1.00	
Cultivating	1.88	
Hoeing	2.12	
Irrigating	1.63	
Harvesting	5.89	
Stacking	2.68	
Threshing	6.08	
Hauling	.59	
Total labor		$41.22
Use of sacks	$ .20	
Seed	4.46	
Machinery charges	1.24	
Use of land	10.88	
		$16.78
Total cost per acre		$58.00

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Colorado Cattle Win

That Colorado cattle lead the world was again proved at Chicago, where the International Live Stock exposition was held early in the month. A load of Colorado Angus calves, shown by N. L. Harrison, Jr., of Roggen, won grand championship honors in the feeding classes, the judges declaring them to be the best load of feeder cattle exhibited at the show. Al A. Neale of Montrose exhibited a bunch of Shorthorn feeders and won first prize and championship in the Shorthorn classes. Jack Tripler of Montrose won second prize.

The grand champion fat steer of the show was Merry Monarch, a 2-year-old pure bred Shorthorn steer, fed and shown by Purdue university of Lafayette, Ind. The steer, sold by Clay, Robinson & company of Chicago in the auction ring at $2.05 a pound, weighing 1,610 popnds, and brought $3,300.50, the highest price on record for a fat steer. The steer was purchased by the American Shorthorn Breeders' association and resold by them to the Congress hotel at $2.10 a pound, the proceeds being donated by the association to the Red Cross.

Feed Concentrate With Silage

Silage alone does not constitute a balanced ration. It is comparatively rich in carbohydrates and fats, and deficient in protein and mineral matter. For this reason best results are to be had only by the use of supplementary feeds comparatively rich in protein. Alfalfa and clover hay, linseed and cottonseed meal, and feeds of like nature are suggested for this purpose.

Comment by Farmer Putnam

MISSOURIAN DESCRIBES HIS VISIT TO THE FAMOUS PIKE'S PEAK REGION

WAS you ever in the Pikes Peak region? If you hain't you're missin' some fine scenery and some finer people. I was down a few weeks ago helpin' run the Autumn Exposition at Colorado Springs, which is the county seat of the Pikes Peak region, and next to Greeley, the oldest dry town in the west. Water is the foundation of the town and now water is all you kin git. It was not always thus, as them poets say. If it wasn't fur them springs around Manitou, where the Indians used to come and drink before they knowed from the white man what firewater tasted like, thar wouldn't be no Colorado Springs.

The city was built up fur a resort town and the industries come later. It was just as well to begin that way, because when a town starts with factories and railroads and looks only fur business, it gits ragged and smoky. Resort towns start the other way, lookin' nice and neat, with wide streets and plenty of parks and no matter how many industries comes later, they ain't allowed to spoil the looks of the place.

That's the way with Colorado Springs. It's a classy town, with wide streets, high soundin' Spanish names, big hotels, lots of millionaires and Englishmen. Golf and polo is the favorite games. Polo is about the same as our horseback potato races we has with the broncho bustin' contests, and golf is the favorite game of men that pays alimony and income taxes and has no other occupation by day and nothin' to do by night exceptin' to play poker.

Well, all them swell society folks didn't make the town more prosperous or enterprisin', exceptin' that it kept the name of Colorado Springs in the Denver Post from time to time, but that wasn't nuthin' to brag about. So the good common people of the Springs got tired of bein' called a social center and they sez: "Let's git busy and do somethin' that's worth while. Let's raise chickens and spuds and corn and beans and show the world that the Pikes Peak region kin produce somethin' besides society scandals and scenery."

Well the upshot of it was they hired a feller named Lauck to be county agent and they sez to him:

"Lauck we got a dickens of a fine country here. Lots of climate, unequaled scenery, rocky gorges, high mountains, waterfalls; sometimes rainfall; prairie as fur as the eye kin see and now with all them advantages we think the Springs ought to become a great agricultural center. It's up to you to organize the farmers and we'll stand behind you and git 'em markets fur their goods and git our home people to use home products. Now go to it, we're with you."

Lauck had raised crops out to Eads, so he said he knew it could be done in El Paso county, and he got busy among the farmers that was already on the land, while others got busy to bring in more farmers and now such a change! In six years the county has been built into a first class agricultural county with silos, corn fields, bean fields, alfalfa, Sudan grass, feterita, potatoes and all them products, and herd after herd of dairy cows to make milk and cream. The farmers fell in with the scheme and said: "Let Colorado Springs build roads and help us market the stuff and we'll grow it."

It don't rain no oftener than it did before they had a county agent and it hails onct in a while yet and there is still some grasshoppers and prairie dogs left, but somehow when people pulls together that way the Lord seems kind-a good to 'em. I think somewhere in the Bible it says "The Lord helps those who help theirselves." The trouble with that proverb has been that people thinks it means those that help theirselves to the other fellers goods and profits, but where they got the right sperit of it and helps their neighbors as they want to be helped theirselves, why the Lord don't forsake em, but gives them a chanct to use their intelligence and gumption and make the best of their natural advantages. So it comes about that some communities succeeds when they hain't got no more climate advantages then other communities. I allus did say and I've learned that it's true from observin' things fifty years, more or less, out west and back in Missouri, that where people have the community sperit and are interested in each other's success even to helpin' with farm work and tools as well as advice, why there's mighty few failures even in a dry year. We blame lots of things on the Lord, and the climate, or the county gent fur which we ourselves is responsible.

So things is goin' along well from a farmin' standpoint and nowadays if you pretend to be somebody in the Springs they don't ask you what club you belong to, or what your score is on the links out to Broadmoor, or whether you're related to the aristoratic Browne-Jonses but they sez: "Have you got a farm and how did your bean crop come out?" The town is farm crazy because the real farmers out in the country is succeedin' as I seen by the fine products they showed at the fall fair.

But tourists is still one of the leadin' cash crops of the Pikes Peak region. When moisture conditions was good in the Springs some years ago, the statement was made that the tourist crop would fall off whenever the n w law went into effect, but that ain't the case. Scientific cultivation brings success in the tourist crop under dry methods the same as farmin'. The old irrigation days are over and the tourist crop gits bigger every year, because the people of the Pikes Peak region knows how to handle the business and they treats their visitors white. Alvy Henderson is the feller that has done fur the tourist crop what Lauck has done fur beans, corn and spuds. Alvy is secretary of the Chamber of Commerce and directs the advertisin' fur the Pikes Peak region. He goes up every so often and gits inspiration from Old Pike hisself. The peak is a fine old feller if you know how to draw him out, but he won't talk to no tenderfoot. Alvy was raised right at his feet and he's looked up to him ever since he was a kid, and knows the mountain lingo. Old Pike has been in them parts since before the year 1, whenever that was, and he looks as spry today as he did when the morning stars sung in the same key, with no sign of changin' his position, in that respect hein' like the Republican party on the tariff.

Lately he's been a little uneasy because there's so much crawlin' up over the back of his head by insecks which we humans knows as autos, but he don't say nuthin'. I guess he thinks: "Well let 'em have their fun; I'll be here long after the last gas buggy has gone to the junk heap and Ford is makin' popular priced harps in heaven; yes, after they quit usin' my roof fur a gas station fur aeroplanes. Them poor humans and their inventions come and go, but I stay right here, the oldest settler of the

Turn to Page 13

A useful gift from a thoughtful giver

President Suspenders for comfort

and for Christmas

The universal favorite—3,000,000 pairs sold last year—so free and easy and great for wear—the best suspender quality at any price. A *Safe* purchase because we

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has sharp blades of the best steel. Fastest of all augers. For post holes and wells. Sizes 3 to 16 inches; 8 inch $2.25, freight extra.

Write for booklet about Iwan post hole diggers, sickle edge hay knives ($1.75 prepaid P.P. if dealer will not sell you), ditching spades, drain cleaners, tile hooks, chimney tops, etc.

IWAN BROS.
Dept. B, South Bend, Ind.

Show this advertisement to your dealer

With Straight Edge

Genuine Iwan Augers wholesaled by Moore Hdw. & Iron Co., Denver; Holmes Hdw. Co., Pueblo, Col.

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Solicits Your

CHRISTMAS ORDERS

Goods Almost Invariably Shipped on the Day Your Order Is Received

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SATISFIED CUSTOMERS have made this store the greatest Mail Order House in the Middle West, and you assume absolutely no risk in sending us your orders for anything needed for wear, ornament or household use. If you do not approve the goods sent you, return them at our expense.

WE PREPAY on all goods excepting furniture items, linoleums, paints and groceries.

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Get One FREE

New KEROSENE Light Beats Electric or Gasoline

10 Days FREE—Send No Money

We don't ask you to pay us a cent until you have used this wonderful modern white light in your own home ten days, then you may return it at our expense if not perfectly satisfied. We want to prove to you that it makes an ordinary oil lamp look like a candle; beats electric, gasoline or acetylene. Passed by Insurance Underwriters. Children handle easily. Tests by U. S. Government and 35 leading Universities show that the new ALADDIN

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Dairying and Hog Raising

GEO. E. MORTON

Free advice on the commercial or technical features of dairy farming and hog production. Please address your letters to DAIRY DEPARTMENT, WESTERN FARM LIFE, DENVER, COLO.

MORE HOGS NEXT YEAR?—We know now that a definite price will not be set on next year's pork. But we know, also, that the food administration is pledged to use its full power to maintain pork prices on a profitable basis and that the administration accepts the cost of 13 bushels of corn as a reasonable price for 100 pounds of pork, present war conditions considered.

If this can be carried out—and government purchases will go a long way toward doing it—I am satisfied pork producers will be content to take a reasonable risk themselves and undertake an increase in pork production in order to increase the available supply of fats for human food. And right now is the time to go at it.

Sows that are not already bred should be bred at once. All farrowing should be over before the first of May if possible. That will enable you, by feeding liberally while the pigs are on alfalfa, to have your shoats ready for fattening as soon as barley is threshed, and you can market the bulk of your spring pigs in October, before the usual market slump occurs. There is always a drop in the market in late fall due to a rush of the first lot of hogs finished on corn.

Probably the greatest detriment to increase in pork production is the fact that right now it is difficult to finish hogs at a profit with feed prices where they are. Let me give some suggestions:

If you can buy good plump barley at 20 cents or more per hundred under corn, buy all you need for finishing your hogs. In most sections barley has sold much lower than corn and it is nearly equal to corn in feeding value. Grain dealers all fall have been talking $2.25 per cwt. for new corn, but now that new corn is here the low price has not materialized.

Gluten feed can be purchased in northeastern Colorado at $63 per ton and hominy feed at $58 and $59 per ton. These are valuable feeds at the prices quoted until we can get good corn at $3 per cwt. or better. Tankage or gluten feed, or wheat shorts should be used in conjunction with either corn or hominy feed. Good alfalfa hay or leaves may still be profitably used in spite of the high price of hay, inasmuch as grain feeds are just as high in proportion.

Now that green forage for hogs is all gone they should be fattened just as rapidly as possible. There is no profit in lengthening out the feeding period of a fattening hog. Crowd him to the limit.

Perhaps you noticed the news item that pork has gone to $50 a barrel, the highest price ever paid in America? That is to me encouragement. Let us not only feed more hogs, but feed them more cheaply by using the feed which is cheapest at the time. If I can help you in your feeding problems write me care Western Farm Life.—G. E. M.

Use of Milking Machines

The milking machine will help solve the labor problem for the dairyman who milks 30 cows or more, believes O. E. Reed, professor of dairy husbandry in the Kansas Agricultural college.

"Labor was 25 per cent short before the draft and now it is much shorter," said Professor Reed. "Dairymen with large herds are having trouble getting help and are using milking machines successfully. With a herd of less than 30 cows very little labor saving is effected.

"A milking machine will not do quite so good a job of milking as a first class hand milker but will do a better job than an average milker. The success one has with a milking machine will depend to a considerable extent upon the ability of the person who operates it.

Silage Makes Cheap Milk

Silage makes cheap milk—it takes less grain. An Ohio experiment with eight cows for a period of four months shows that one acre of corn fed in the form of silage will produce from 30 to 50 per cent more milk than one acre fed as dry fodder. This experiment was carried on in Ohio (Ohio Bulletin 159). Eight cows were divided in two lots, four cows in each lot. The cows were fed for a period of four months. The object of the experiment was to determine whether silage could be substituted for a considerable portion of the grain usually fed to dairy cows. The facts presented here justify the conclusion that silage can be made to take the place of a larger portion of the grain ration.

Here is the average daily ration of the four cows in Lot 1, which received a grain ration: Stover, 4.7 pounds; mixed hay, 6.4 pounds; oil meal, 2.5 pounds; corn meal, 3 pounds; wheat bran, 6 pounds.

Here is the average daily ration of the four cows in Lot 2, which received a silage ration: Silage, 58 pounds; mixed hay, 6.8 pounds; oil meal, 2 pounds; bran, 2 pounds.

In Lot 1, where grain composed the greater part of the ration, the profit per cow was $2.46. In Lot 2, where silage predominated in the feed, the profit per cow was $5.86.

In Lot 1, where grain predominated, it cost $1.06 to produce 100 pounds of milk, as compared with 69 cents in Lot 2, where silage was fed in excess of the grain.

Out of more than 100 letters received from county agriculturists and prominent dairymen from nearly every state in the United States, the Agricultural Extension Department of the International Harvester Company found it to be the general opinion that one acre of corn fed in the form of silage will produce 35 to 50 per cent more milk than one acre of corn fed as dry fodder.—Extract from The Cow, published by the International Harvester Company.

Profitable Way to Sell the Milk?

Early in spring I hope to start small dairy business. What cows would you advise and the most profitable way to sell milk; as butter or cheese?—Mrs. H. B.

In general the most profitable way to sell milk is bottled or in bulk. This is, of course, the method when you live near a city or small town, in which case you have to try to find customers for it. The cleaner the milk that you deliver, the more chance there is of succeeding.

Living in the country, however, whcih you do not state, so I cannot judge about that, then the way will be to make butter or cheese. Supposing that the butter price the coming spring will be forty-five cents per pound (which is, of course, hard to say so far in advance, so that it is merely a supposition) and further that your milk will test about 3.5 per cent fat, then every 100 pounds of milk will yield about 4 pounds of butter at a price of 45 cents, thus bringing in $1.80. In addition to this $1.80, you get about 85 pounds of skim milk at 1 cent a pound for instance, making 85 cents, and further about 10 pounds of buttermilk at 1½ cents a pound, making 15 cents. Thus altogether you get $2.80.

In making cheese of 100 pounds of milk, and supposing again that the cheese price next spring will be about 30 cents a pound (excellent cheese, of course, will sell much higher,) these 100 pounds of milk will give a cheese value of about 9½ pounds at 30 cents, making $2.85. In addition to that, you get about 45 cents worth of whey, thus the total is $2.85 plus $ .45 or $5.60.

It should be remarked, of course, that this is the gross value. You will have to subtract from each 10 to 30 cents, expenses for the making, transporting, time, labor, etc.

As to what cows I would advise, I might say: buy the best you can, it does not matter what breed. Holsteins generally give more milk, Jerseys, however, richer milk.—Dr. L. S. Dijkstra.

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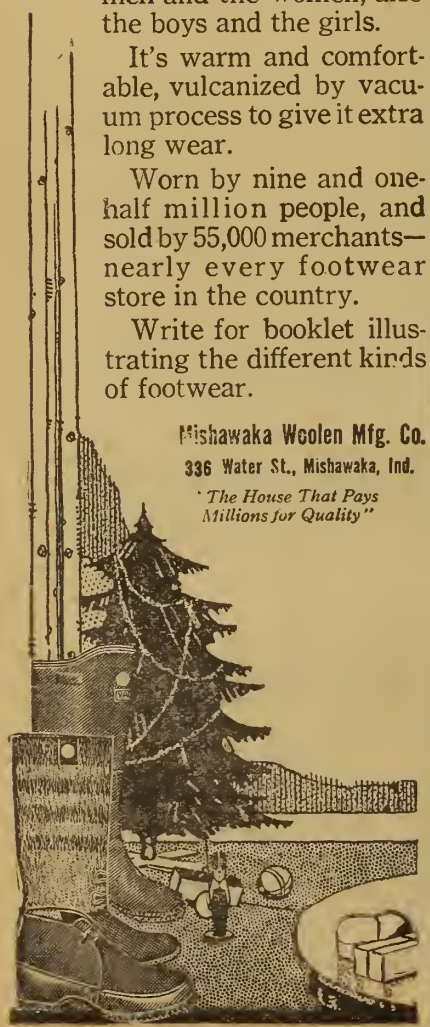

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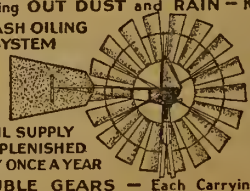

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Hog Production Now Profitable

E. W. Ferguson, Jr.

With the announcement of $15.50 as the suggested price for packer's droves at Chicago, we hog men can realize that the industry is placed on a more stable basis. For years I prided myself that I was something of a hog expert but for the last twelve months the situation was so very chaotic that I felt chary about handing out hog dope. I have continued in business at the old stand with moderate success but failed to quite get in on the $20 hog market; that would have been some velvet. I closed the 1916-17 business in September realizing $17 locally, it being $4 better than was offered six weeks before and $5 better than some were compelled to take six weeks later.

Now I do not understand that $15.50 is actually guaranteed us, but as the government has practically taken over the plants under a license system it will have a strong tendency to stabilize; it is advisory rather than obligatory. And $15.50 at Chicago should mean right close to $15 at the shipping point.

The committee finds that the best ratio on which to fix the price of hogs will be one based on the price of corn, for most hogs are corn raised ones. It has required an average of 11.6 bushels of corn to buy 100 pounds of live hogs on the Chicago market for the last 10 years, and that whenever 100 pounds of hogs would buy more than 12 bushels of corn, the immediate effect would be that hog numbers would increase, while if 100 pounds of hogs would buy less than 12 bushels their numbers decreased. It is also given out as probable that a ratio of 100 pounds of hogs at Chicago will be equivalent to the value of 13 bushels of corn. Some hog men feel that they ought to have a ratio of 14 to 1 but there is surely some profit at any ratio above 10 to 1 for the good hog man, while if it requires 14 bushels of corn or its equivalent there is surely an avoidable waste.

The price as fixed would give a 13 to 1 ratio on corn at $1.20 and December corn is quoted at about $1.15 to $1.20 at terminal points.

Another point should be brought out here. With corn at $1.15 to $1.20 at the central market points it will be right around $1 in the farmer's hands, so with even $1.50 margin between the local market and the Chicago, Denver or other central hog markets, we hog men can just about figure on an actual ratio of close to 14 to 1, as it requires a great deal more to ship the 13 or 14 bushels of corn than it does the 100 pounds of live hog weight. I have fed most of the popular and some of the unpopular feeds to hogs and will say that any good hog man with the proper supplements can operate at a profit with corn not higher than $1.40, rye meal, barley meal or a good quality of shorts or middlings at $2.50 a hundred; germ meal, gluten feed and breakfast food by-products about the same, and even oats at anything under 70 cents a bushel.

Tankage will not be prohibitive at $5.00, oil meal at $3.00 or $3.50, or cotton cake at about the same figure while skim milk will be worth right around one cent a pound.

I am now buying corn at $1.25 per bushel, oil meal at $3.30 a hundred and have quite a bit of milk. A little bran at $1.60 a hundred will be used, as it is almost impossible to get alfalfa here, so taking a composite of my whole feed cost as the supplements are relatively cheaper than corn, my own operations are going to be reasonably profitable.

We hog men are not liable to get rich this year, but we are almost sure of coming out at the end with a nice little sum for our work and trouble, and after all that is about all that is intended in naming a price to encourage production.

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C. W. Thompson, Hutchinson, Kansas, writes; "300 of our sheep were scouring badly, and in run down condition. Those sheep are now as healthy as the balance of the flock. They are gaining faster than any lot of sheep I ever saw, as a result of feeding Carey-ized Stock Tonic Brick."

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Rations for Breeding Gilts

The farmer wants to know how he can maintain his sows during the winter with feeds at the present high prices and make a profit. The University of Missouri College of Agriculture has found that satisfactory rations for the winter period or while the gilts are pregnant will not be excessively expensive. In December, 1916, 42 head of purebred Poland-China gilts, farrowed in late March and April in the previous spring were placed on a feeding experiment. These gilts had been liberally fed on forage during the summer and fall. They were divided into six lots of seven each and each lot was handled in exactly the same manner except that a different ration was fed. One lot received corn 10 parts, tankage 1 part, all the alfalfa hay that they would eat; a second lot received the same ration except that clover hay was substituted for the alfalfa; a third lot received corn 10 parts, tankage 1 part; a fourth lot received corn 5 parts, old process linseed oil meal 1 part; a fifth lot received corn 8 parts, shorts 2 parts, tankage 1 part; the last lot received corn 8 parts, shorts 4 parts, bran 1 part, tankage 1 part.

The clover and alfalfa hay were fed once daily in a rack. The corn was ground. All feed excepting hay was mixed with water at feeding time and fed morning and evening. All lots received enough feed to keep them in good growing and breeding condition. An effort was made to keep all lots at a uniform weight. In other words, the condition of the sows fixed the standard of feeding and thus determined the amount of each ration fed.

The average weight of the gilts at the beginning of the trial was 186 to 188 pounds and at the close they averaged 265 to 270 pounds, having gained 75 to 84 pounds. The cost of feed consumed ran from $11.84 to $13.47 per sow with feeds at recent market prices: corn $1.25 per bushel, shorts $2.60 per cwt., bran $1.75 per cwt., tankage $90.00 per ton, old process linseed oil meal $60.00 per ton, alfalfa hay $30.00 per ton, clover hay $20.00 per ton.

Figuring the value of the gain at market price of pork it will be seen that the value of the gain was enough to pay for the feed consumed. It is, of course, true that "piggy gilts" would not be salable on the market without a dock. On the other hand, it is very seldom that such gilts could not be sold for brood sows just before farrowing for more than they would weigh out at the market price of pork.

Inflammation of the Bursa

What is the matter with my horse? She had a lump come on her right ankle on the inside the size of an egg. I blistered it with Dr. Robert's bone blister and it seemed to make her worse. The ankle and leg is swollen as far up as the knee and she can hardly walk. She eats good but seems as tho her ankle hurts her so bad that her feed does her no good and she is getting thinner all the time. This has been bothering her for about four weeks.—E. A. S., Ft. Morgan, Colo.

The horse apparently has inflammation of the bursa of the fetlock joint; probably caused by a severe strain. Where a tendon moves over a joint nature has provided a means to prevent friction and reduce the danger of injury to the minimum. Here is found a sac with cartilaginous walls and a membrane which secretes a lubricating fluid like "joint water." In case of inflammation of these structures there will be an excess of this fluid and consequent distention of the sac. This is commonly spoken of as "wind puff." If the inflammation becomes chronic there will result contraction of the tendon and bending of the knee forward. During the period of acute inflammation use hot applications, such as poultices, antiphlogistin, hot water, etc. If the inflammation becomes chronic, liniments and mild blisters are indicated. See your veterinarian for detailed treatment.—G. H. G.

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The Farm Home

MRS. H. T. FRENCH

Questions about home problems promptly answered by letter and thru the magazine. Address all communications to Editor Home Department, Western Farm Life, Denver, Colorado.

Let's Not Forget the Aged

Among other pictures that pass before my mind as I write you a "Merry Christmas Greeting" and would offer a word of hope and cheer to those who are looking at the vacant chair as they send loving thots with their tear-stained packages to "our dear boy" in camp, on seas, or over in France, is a long remembered, never-to-be-forgotten picture of an old white haired man clasping the hand of the "dearest old lady" by his side. This aged husband is trying to cheer his wife, as the couple are about to be separated because of the breaking up of a home for old people.

We never forget the children at Christmas, and that is right. Are we sometimes in danger of overlooking lonely hearts which are quite as much in need of the holiday cheer and sympathy as are the little folks? These dear old people who once made joy and cheer for others need that their few remaining days be made warmer and brighter by the yuletide glow.

Meats can be canned successfully by any housewife who understands the use of the hot water bath or steam pressure cooker methods of canning, according to Otis E. Hall of the division of extension, Kansas State Agricultural college.

In the canning of meats, as in the canning of vegetables, definite rules must be followed to insure success. All parts of the meat that are used should be thoroly cleaned. If the hot water bath method is used the heat must be intense enough to boil the water rapidly and the time of processing or cooking should not be counted until the water around the jars boils.

The jars, lids, and rubbers should be washed and sterilized with boiling water and the meat should be packed into the hot jars until it reaches the top. If screw type lids are used they should be made as tight as possible with thumb and little finger before placing the jars in the cooking vessel. If the bail type jar is used the top bail should be left loose until the jar is taken from the hot water bath. Only first class rubbers should be used. Good rubbers can be stretched and will return to their natural size. Lids should be tightened as soon as the jars are taken from the hot water bath or steam canner.

If there is not enough meat to fill the jar it is not necessary to do so with water. Usually about a tablespoonful of boiling water, or just enough to create moisture in the jar, will be sufficient. If the meat has been browned before canning and the jar is not filled, the liquid or grease in which the meat has been heated should be poured over it as there is no danger of getting too much of this and it will make good gravy when the can is opened. All these points—altho some of them seem unimportant—have a direct bearing on the success of the canning work and none of them should be overlooked.

In canning beef or hog liver, cut in slices one-third inch thick. Blanch or parboil one minute in boiling water, remove and pack in jars. Add one teaspoonful of salt to each quart. Fill jar with boiling water. This should require only a small amount as the meat should be packed closely. Some of the water should reach the bottom of the jar and this can be accomplished by pressing the meat away from the sides of the jar with a fork or knife to allow the water to pass. If using the hot water bath outfit, process three hours for pints and three and one-half hours for quarts. If steam canner is used, process in 10 to 15 pounds of steam 75 minutes for quarts and 60 minutes for pints.

The Christmas Dinner

Too much cannot be written to help along the return of the old fashioned Christmas when around the festive board with places set for the home-folks of ten or more, and the children constitute the majority. To combine the festivities of the day we may set the hour at one-thirty or two o'clock and build the table around the tree. Place laughing Santa Claus near the tree in a wreath of holly, one hand resting on the tree, the other holding the ends of the ten or twelve red ribbons, the other end of each ribbon ending at each place, holding at its end a pretty little gift or Christmas motto.

The following menu may help some busy mother:

Tomato Bisque
Brown Bread and Butter
Salted Nuts Candies
Stuffed Dates
Turkey with Bread Stuffing
Fried Apples Boiled Onions
Potatoes on the Half Shell
Pineapple and Cream Cheese Salad
Nut Bread Sandwiches
Plum Pudding with Beaten Sauce

Recipe for Plum Pudding

(Very Simple)

1 cup fresh suet
1½ cup brown sugar
2 cups seeded raisins
A little shredded citron
1 cup grated potato
1 cup grated carrot
2 cups flour
1 teaspoon soda
Salt and cinnamon

Steam in buttered can or pail three hours, or it may be steamed in old fashioned pudding cloth.

Sauce

Beat one cup butter to a cream. Add 2 cups of powdered sugar, beat again and flavor with nutmeg.

If the turkey is fixed ready for roasting the night before, also the nuts and similar relishes made ready, the preparation of the dinner need not keep mother from church service or from enjoying the joyous companionship of the family circle.

Simple Sugarless Desserts

Hot rice or hasty pudding (cornmeal mush) served with sweet sauce makes a simple wholesome dessert. Chopped raisins or dates may be added to either but no sugar is needed. Here are a few easily made sauces:

Honey Sauce—1 cup honey, ¼ cup water, 1 tablespoon butter substitute, ¼ teaspoon salt, ¼ teaspoon cinnamon, a dash of nutmeg, juice of 1 lemon or 2 tablespoons vinegar. Boil together 15 minutes. The juice of one orange and grated peel may be used instead of lemon and seasoning in this recipe.

Molasses Sauce—1 cup molasses or syrup, 1 tablespoon cornstarch stirred smooth with water, 1 tablespoon butter substitute, ¼ teaspoon cinnamon, a pinch of salt, lemon juice or vinegar to taste. Boil all ingredients together 20 minutes. Hot molasses flavored with ground ginger makes an excellent sauce.

Maple Sauce—To 1 cup of maple syrup add ¼ cup of nut meats chopped fine. Heat and serve with hot rice.

Chocolate Sauce—Add 1 square of melted chocolate to 1 cup of hot corn syrup. Season with vanilla.

PATTERN DEPARTMENT

All patterns 15c each. Address WESTERN FARM LIFE, Pattern Department, Fourteenth and Arapahoe, Denver, Colo.

1922—Charming Little Frock. Cut in sizes 6, 8, 10 and 12 years. Requires 3¾ yards 36 inch material for 8-year size. Blue serge and blue and green plaid suiting were combined to make this natty design. The closing is effected at the left side, under the tuck stitching. Comfortable, serviceable pockets trim the fronts. The skirt is a gored model and joins the waist under the belt.

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2024—Ladies' House Dress. Cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Requires 7 yards 36-inch material for size 36.

This design is good for striped seersucker, for checked gingham, repp, poplin, flannelette, linen, drill and other washable fabrics. The fronts are finished in coat closing and have smart pockets. The fullness is gathered at the waistline.

2082—Popular, Comfortable One-piece Dress. Cut in sizes 16, 18 and 20 years. Requires 5⅝ yards 44-inch material for 18 year size. There is hardly any style so well adapted to slender figures as this one. It is easy to develop and good for any of the materials now in vogue. Broad panels, with plaits at the seams, are joined to the side fronts. A smart collar trims the "V" neck edge.

2258—Pretty Waist. Cut in sizes 34, 36, 38, 40, 42 and 44 inches bust measure. Requires 3⅝ yards 27-inch material for size 36. This style will be nice in cream or flesh color crepe or soft silk, in any of the pastel shades. It may be trimmed with lace or embroidery. It is also nice for organdy, lawn, bastiste, taffeta, satin or net. The fronts are closed over a tucked vest.

2260—Pretty Dress for Mother's Girl. Cut in sizes 6, 8, 10 and 12 years. Requires 3⅝ yards 36-inch material for size 8. One could use serge, repp, poplin or gabardine for this model. It is also nice for gingham and other wash fabrics. The sleeve may be in wrist or elbow length. The skirt is arranged to form a plaited panel in back and front.

2276—Smart Style for the Young Miss. Cut in sizes 12, 14 and 16 years. Requires 4¼ yards 36-inch material for size 14. Here is a pretty model for charmeuse, poplin, satin or taffeta, and equally nice for the new duvetynes, cashmeres or gabardines. The dress is cut with one piece lines and has pretty pockets inserted at the side seams. The sleeve is new and dart fitted. A good feature of this model is that the fronts may be finished with open neck, or rolled up in high closing.

2279—Easily Made Apron. Cut in sizes: Small, 32-34; Medium, 36-38; Large, 40-42; Extra Large, 44-46. Medium size requires 2½ yards material. Seersucker, chambray, gingham, lawn, percale, drill, linen and alpaca are nice for this style.

2290—Unique and Attractive Styles. Cut in sizes 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Requires 6 yards 36-inch material for size 38. This model is nice for serge, broadcloth, satin, velvet, crepe, velour and cashmere. The front is cut in tunic style. Its skirt portion is mounted on a fitted lining. The back is in one piece.

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Profitable Farm Poultry

W. E. VAPLON

Questions about the farm flock promptly answered by letter. Free advice on all phases of poultry production. Address all inquiries Poultry Department, Western Farm Life, Denver, Colorado.

Don't get discouraged over the outlook for poultry. There is a better time coming and this is the season when the careful poultryman must plan for the future. If you wait till February or March you will be too late to take full advantage of better conditions. Read the following paragraph from Poultry Press:

"The poultry business in the United States has gone into a slump due to the high price of feed and the fact that a large number of commercial poultrymen have been 'getting along' with inferior stock. But a revival is coming and it will gain more force than the slump ever thot of having."

There were 46,206,059 pounds of frozen poultry stored in the United States on November 1st, according to the latest reports of the Bureau of Markets, Department of Agriculture. This unprecedented total is merely indicative of the heavy selling off of live poultry by the producers. The panicy condition which impelled the consequent decrease in the amount of stock left on farms for layers and breeders is merely a repetition of the experience of Canada at the outbreak of the war.

That there will be an enormous demand for eggs for hatching and breeding stock among poultry breeders this coming season is inevitable. The present supply of poultry and eggs in cold storage is insufficient to satisfy the increased demands for domestic and foreign consumption. The nation calls for increased production of poultry meat to substitute for the "red meats"—beef, pork and mutton—which are short. Our allies are painfully short on eggs at any price. A recent London dispatch says: "The latest move in the food campaign is to request the British people to do entirely without eggs during winter. Eggs are now 12 cents each and the entire supply is needed for hospitals."

Altho the high cost of feed is primarily responsible for the scarcity at home and abroad there is encouragement for the American poultry keeper in the prospects for an early decline in the price of corn to the neighborhood of $1.15 or $1.20 per bushel. Prices for poultry products will gradually become adjusted to allow a fair margin of profit to the producer and farmers, and poultrymen everywhere should prepare now for maximum production during 1918. Earlier hatches are essential. Suitable equipment must be provided. Don't wait till the season is at hand. Order your supplies now.

Egg Laying Rations

What are the best rations for White Leghorn hens to make them lay? Is it best to give them open range, or should they be confined?—J. W. M., Masters, Colo.

If we were to answer in one word your question regarding the best ration for White Leghorn hens, that word would be "variety." Generally speaking, I would say that the best ration is that which brings results at the least possible cost. Sometimes the ration producing best results does so at too great a cost, so that the value of the ration cannot always be measured by the returns. Just now when it is neither possible to buy wheat for poultry feed nor advisable to use it as poultry feed, when it is so badly needed for human food, we should do our best to substitute other grains. Personally, I feel that corn is, if anything, a more valuable poultry feed than wheat, especially where alfalfa can be so easily had. Almost any combination of two or three grains will furnish the necessary variety. Even one grain such as corn might do very well as a main feed if we would complement the one grain by a mash made up of boiled vegetables mixed with bran and shorts or bran and barley chop or even bran alone. Alfalfa also furnishes a splendid protein and bulky feed to offset the fattening qualities of corn. In some communities such feeds as broken beans and peas are often wasted or lost in the field. They are heartily relished by fowls, as are any of the root crops. A large share of the rations could be made up of these staple feeds, which are so often neglected. There is no question in my mind as to the value of free range for fowls during good weather. Range offers a variety in the rations and exercise, which is essential to good health. Of course, it is not advisable to turn hens out when the ground is wet and cold. Hens, even if accustomed to free range, will be perfectly contented when yarded if given something to do. The straw stack of the farm or a deep litter furnishes employment for them in the poultry house. Only a few days ago we had occasion to cross some stubble fields and alfalfa and found a good many grasshoppers, some alive and some frozen to death, but all good feed for poultry. The question is continually arising as to whether hens lay more when on free range or when confined. Both sides have proven their case, but we can be sure of this much, that hens on free range produce eggs at a lower cost.

Weight for Breeding

How heavy should White Leghorn hens be for breeding?—L. J. K., New Mexico.

Ans.: The Standard of Perfection gives the weights as follows: Cocks, 5½ lbs.; hens, 4 lbs.; cockerels, 4½ lbs.; pullets, 3½ lbs.

Autumn Exposition and Training School for Farmers

Continued From Page 3

flour ground on the Bradshaw ranch from the whole wheat. Mr. Bradshaw has been making Graham flour for a number of years, generally marketing thru a Colorado Springs grocer. He has a large supply this winter and, in view of the wheat-saving campaign, he has had more inquiry than usual about the flour. Hhis product makes use of the entire wheat grain, there being no waste, no by-product, nor any loss of food value.

Mr. Bradshaw is famous as a producer of dry-farmed wheat, having won prizes at the International Dry Farming exhibits as well as at many local shows and fairs. His wheat is grown on the mesa at an altitude of 7,500 feet. The varieties are Turkey Red, Red Cross, King of Winter and Marquis, the latter being a spring wheat. The Graham flour is made from a blend of these wheats and put up in 48-pound sacks. The Bradshaw ranch took three blue ribbons, getting first on Marquis wheat, late Ohio potatoes and Red McClure potatoes.

The largest individual exhibit was that of the Arobine ranch near Calhan, owned by Dr. Asa F. Cogswell, with Paul T. Willis foreman. First prize on best ten ears of white flint corn, second on pinto beans and first on late oats went to the Arobine ranch.

Miss Anna Williams of Ellicott again won first on pinto beans, shown in bushel lot, the product being perfect as to type, color, size and grade. She repeated her good showing of last season, the 1917 prize beans being grown from seed which won first for her 1916 crop.

The poultry and pet stock show occupied more floor space than the agricultural exhibits. There was a splendid showing of birds and pet stock for which the Pikes Peak region is famous. In the rabbit division there were exhibits from states as far east as Indiana.

The county championships for club work were announced, the corn club winners being James Madden first and D. Smith second. These are orphan boys who live at the Myron Stratton home. The potato championship went to the Elton Potato club of the Monument district, the winners being Everett Hodgson first and William H. Peterson second. These boys get a trip to the Farmers' Congress at Fort Collins and to the National Western Stock show at Denver in January as a reward for the excellent showing made. W. E. Vaplon, state club leader, and the Misses Maud Sheridan and Louberta Smith of that department were on hand to assist in the arrangement and judging of boys' and girls' exhibits.

CORN

Best 10 ears yellow dent—Elva Clements, Crows Roost, first; David Davis, Motor Route A, second.

Best 10 ears white dent—W. H. Cooper, Truckton, first. No second.

Best 10 ears calico dent—W. H. Cooper, Truckton, first; E. Stark, Ellicott, second.

Best 10 ears white flint—A. F. Cogswell, Calhan, first; J. H. Allen, Truckton, second.

Best bushel yellow dent—Alva Clements, Crows Roost, first; J. G. Robinson, second.

Best bushel of calico dent—W. H. Cooper, Truckton, first. No second.

Best bushel white Australian—E. F. Campbell, Ellicott, first. No second.

BEANS

Mexican pinto—Anna Williams, Ellicott, first; A. F. Cogswell, Calhan, second.

Mexican white—No first prize awarded. Viola Thompson, Colorado Springs, second.

POTATOES

Russet Burbank—W. H. Hopper, Eastonville, first; E. C. Hodgin, Monument, second.

White Pearl—E. C. Hodgin, Monument, first; C. C. Steppler, Monument, second.

Early Six Weeks—William H. Paul, Eastonville, first. No second.

Early Ohio—L. C. Steppler, Monument, first; Delbert Peterson, Eastonville, second.

Late Ohio—G. M. Bradshaw, Peyton, first; Homer Laughlin, Eastonville, second.

Rose Seedling—Homer Laughlin, Eastonville, first; R. Ayer, Eastonville, second.

Red McClure—J. M. Bradshaw, Peyton, first; G. A. Ryan, Monument, second.

Peoples—Stout Brothers, Monument, first. No second.

White Elephant—H. A. Burgess, Bald Mt., first; Stout Brothers, Monument, second.

OATS

Early varieties—C. C. Garrett, Monument, first; Schwartz and Son, Eastonville, second.

Late varieties—A. F. Cogswell, Calhan, first; W. McConnell, Monument, second.

Prizes in the livestock section were awarded as follows:

Registered Holstein Bull—C. S. Mangas, first; Spencer Penrose, second.

Purebred Cow, Holstein (any age)—Spencer Penrose, first. No second.

Registered Purebreds or High-Grade Female, Holstein—Clarence Lauck, first; Leland Barnes, Monument, second.

Purebred Holstein Bull Calves—Myron Stratton Home, first and second.

Registered Boar, Duroc Jersey (1 year or over)—J. W. Brauer, first; Spencer Penrose, second.

Registered Boar under 1 year—Myron Stratton Home, first; J. W. Brauer, second.

Purebred Female Duroc Jersey (any age)—J. W. Brauer, first and second.

High-Grade Sow—B. C. West.

The Extension School

If the farmers of El Paso county had known just what the extension school held in connection with the autumn exposition would have meant to them the attendance would undoubtedly have been much larer. It was, as the name implies, a real school, with the farmers enrolling as pupils and the instructor insisting upon active work by the pupils. The subject was animal husbandry and the instructor, R. W. Clark, of the extension staff of Colorado Agricultural college. Prof. Clark's own textbook on "Animal Husbandry for Farmers" was used.

The instructor promised the farmers that, at the close of the four days' course, they would be able to make their own feeding rations with an understanding of food values. He kept his promise. The limited number who took the course will be able to go out among their friends in the county and pass on the fundamentals that were imparted to them. Stock judging was carried on in the exhibit tent at a fixed hour every afternoon by pupils of the extension school, who learned how to handle a score-card. The regular textbook lessons were given in the council chamber of the city hall nearby.

As in the lessons on feeds, so it was with the stock-judging lessons—every step was carefully explained and reasoned out by the pupils under the instructor's prompting. Extension schools of this character are to be held all over the state and it is hoped that farmers will take full advantage of them, as the plan of instruction is practical and fundamentally sound and thoro.

A similar school was conducted at the Y. W. C. A. for the benefit of the women from the farm as well as from city homes, under the direction of Miss Miriam Haynes of the College Extension department, assisted by Miss Mary Collopy, woman county agent for El Paso county.

Facts and Figures on the High Cost of Farming

Continued From Page 4

be said regarding the risks due to weather conditions, the losses suffered by certain lines of producers because of car shortage, the increased taxes that the farmer faces and the drain on his resources by reason of war activities, such as the sale of Liberty bonds, support of the Red Cross and of Y. M. C. A. work, in all of which he has bad a part. There is no class of citizen that has more cause to feel the financial pressure of the war than the farmer and that more keenly hopes for an early restoration of peace, but not until the victory is won.

The following letters come from farmers who contributed to the information herein contained:

The increased price of machinery, the scarcity of labor, the high cost of living, the high price of feed we are putting into our stock, the expense of feeding our work horses, the expensive seed we are putting into the ground, the toll that is taken from our crops by hail, drouth, insects, etc., are disastrous to the farmer financially. In order to farm well one must go his best and it becomes necessary, very often, for a farmer to borrow money. If he can get it at all he has to pay from 8 to 10 per cent interest. This along with hog cholera, blackleg, early freeze, hail or a sick wife is discouraging. * * * Those who say the farmer is having an easy time of it are those who are in some other line of business. The farmer in our part of the country who does not work from sunup to sundown is classified as a slacker, and if our wives do not do their part in the way of hard work it is because they have had to work too hard in the past and can't do it now. We claim there is no one eligible to comment on the average farmer's prosperity and easy way of making a living who has not himself gone thru the mill and found out what the difficulties are.—W. H. P., El Paso county.

I just want to thank you for the piece "In Defense of the Farmer's Loyalty." It certainly is O. K. Town folks say the farmer is getting rich, but it isn't the farmers. We sell beef; get 11 cents dressed; 7 cents live weight but pay 18 cents a pound for the neck when we buy it back. So it is with all we have to sell. The middle man makes more than the one who raises the stuff and the farmer has all the work to do, all the loss to carry and after he pays his rent on land there is nothing left to get rich quick on. The whole farm family works from sunup to dark and in summer the farmer works Sundays and all to get in his crops, while the city people are having their picnics.—Mrs. A. W., Boulder county, Colo.

If the farmers are getting any good out of the present conditions I do not understand where it comes in. I do say and have always maintained that if the farmer is any good at all he will have what he wants to eat and all he wants of it, which cannot be said of the poor devils in the towns, who very often cannot buy what they want.—G. B., Kiowa county.

The government has fixed the price of steel somewhat lower, but farm machinery has not made a noticeable decline. The price of butter is fixed, but did you notice what effect that had on the cream the farmer sells? I must have some guarantee that the price of cream will remain attractive or I cannot continue to milk. The same applies to feeding meat animals.—R. M., Washington county.

A cattle feeder gives the following information regarding costs: "Beet pulp was sold at 75 cents a ton during the first part of the season but now has advanced to $1, which is an increase of 25 cents over last year. We are paying $15 and $16 for alfalfa in the stack, while last fall at this time we were getting it for $8 to $10 a ton. Cottonseed is being quoted at $55 to $60 a ton; it was around $45 a year ago and in 1915 we got it at $34."

Comment by Farmer Putnam

Continued From Page 9

Pikes Peak region and the youngest century after century. It's a great life."

Alvy sez that's the way the old feller talks to him when he goes up every fall to git advertisin' ideas fur the next season.

They is lots of other good attractions at the Springs but they don't make the best use of all of 'em, like the Cave of the Winds. Why don't they use that fur the state legislature to meet in?

Lots of tourist places is run on the wrong system, like the ketch'em and skin'em system, but the Pikes Peak region long ago adopted the treat-'em-right plan and they come back and contribute year after year, because they git their money's worth. Colorado Springs is a good railroad center, with five and a half railroad systems—name the last one yourself; the Springs people all know which one I mean.

I'm gittin' purty well acquainted in the Springs. I know purty nigh all them old landmarks includin' Tony Faus, Bob Torrington, John Lennox, J G. Dern, Dern's Dad, Judge Cunningham, Dr. Argo, Doc Brady, Senator Puffer, etc., and I run acrost one of my old Louisiana friends down thar, Jim Parker. He left the mountain country onct and went down to Monroe and run a railroad that was the best known road fur its size in the United States—only 65 miles long but as well advertised as the Pennsylvania railroad. Lately Jim found a mine up in Wyoming that has everything in it in different streaks, includin' oil, soap, talcum powder, nitrates, asphalt, ink, paint, hair dye, natural and artificial gas—everything that Jim could think of, except gold and silver and that'll come when the mine is developed. (They ain't no stock fur sale.)

Well I could go on fur another column about the advantages and sights of the Pikes Peak region, but I got to quit now and do the chores.

THOMAS JEFFERSON PUTNAM.

Every cellar of vegetables is a trench of food preparedness.

Farmers' Service Bureau

Readers are invited to make generous use of this department. Questions regarding any branch of farming, livestock production, animal diseases, legal matters pertaining to the farm, homestead inquiries and the like cheerfully and promptly answered by letter and thru the magazine. Address all communications to SERVICE BUREAU, WESTERN FARM LIFE, Denver, Colorado.

What Constitutes a Legal Fence

Reply to M. T. K., Arapahoe county, Colo:

The act as amended relating to a lawful fence is found in the 1917 session laws, and defines a lawful fence thus: "A fence of three or more barbed wires, of standard make and usual size, same to be not less than 13 gauge, with posts securely set in the ground not less than 18 inches in depth, said posts to be not less than 3 inches in diameter at the point where the top wire crosses the post and set not more than 33 feet apart with substantial metal or wooden stay or post every 16½ feet, top wire to be 46 inches from the ground, the second wire 14 inches below the top wire, the third wire to be tightly stretched and securely stapled, and all corner, end and gate posts to be securely braced." Distances are approximations; fences equally as good made out of other materials will do.—Hamlet J. Barry, Attorney, 724 Equitable Bldg., Denver.

Line Fence Question

There is a line fence of one-half mile length between myself and neighbor. I have made a sheep and hog fence on my one-half of it. Can I compel the other party to do the same?—W. D. L., Delta county, Colo.

You cannot compel the other party to put up a sheep and hog fence. The most you can compel is a lawful fence. If the other man has the sheep and hogs you may impound the animals for any damage they do. But if you are keeping the sheep and hogs the other party may impound them for damage done to him. —Hamlet J. Barry, Attorney, 724 Equitable Bldg., Denver.

Horse Won't Get Fat

Answer to J. L., Cheyenne county, Colo.

I suspect that the horse is just naturally a "hard keeper," and could not possibly get fat any more than some "skinny" people we know of since Colorado went dry. Many horses in this condition are poor because of sharp, irregular, or decayed teeth. The food a horse eats is not cooked for him and his gristmill must be in order to enable him to masticate his food. The horse can not be very sick or he would not have such a ravenous appetite. However, this does not always hold true, for about the only pleasure a horse gets out of life is eating and it is not an uncommon thing to see a horse die with hay in his mouth. On a homestead it is usually not easy to change feed. Some horses will do better on oats than corn. Fix his teeth, change feed if possible, and give one tablespoonful of Fowler's Solution of Arsenic in his drinking water twice a day.—G. H. Glover, Veterinary Dept., Colorado Agricultural College.

Concrete Water Tank

Answering N. L. W., Pueblo county, regarding the building of a concrete water tank. A six-inch wall should be sufficient for a tank six feet in depth by six feet in diameter, providing the materials are properly mixed. What is known as a 1:2:3 mixture is recommended for watering troughs and tanks; namely, 1 sack cement, 2 cubic feet of sand and 3 cubic feet of pebbles or broken stone. Reinforcement of wire is suitable. Do not build during freezing weather. If properly made of carefully selected materials, such a tank should withstand the freezing of the water.

Breaking "Blow" Soil

Answer to L. E. S., Crowley county, Colo. As you say your soil is light sandy and subject to blowing it would be best to wait until spring to break the sod. Plow early in spring and go as deep as your horsepower will permit. Some find it advisable to first go over the land with a disk, cutting the sod to a depth of about two inches before plowing. This makes plowing easier and quicker. Do this after a wet spring snow, before the frost is all out of the ground. Then plow as soon as the frost is gone and work your ground enough so that it will cultivate easily. Disk and harrow right after the plow, if possible. Fall breaking is a safer plan than waiting till spring, if the soil is not so light as to cause the upturned ground to blow. The surface can be left rough to catch the winter moisture.

Parental Consent to Marriage

Answer to W. R., Adams county: The Colorado law requires the consent of parents to the marriage if the lady is under 18 years of age. The consent of parents in the case of the man is required if he is under 21 years.

Dehorning Wounds

About two weeks ago dehorned some cows and matter has formed and is running from the cuts on one cow. What can or should be done for the same?—F. C. F., Logan county, Colo.

Dehorning wounds usually heal without special treatment if the sore is kept clean. Application of a mild antiseptic solution is advisable for that purpose.

Bringing Sows In Heat

I have two registered Berkshire sows, eighteen months old which I would like to breed but they don't seem to come in heat. Can you advise anything in the way of feed or medicine that will bring them in? Last March they were in heat but having no good boar I did not breed them. Since then they have shown no signs. Both are thrifty and in good condition, have been on rape and rye pasture with some grain all summer. Any help you can give me in this matter will be greatly appreciated.—H. H. E., Buena Vista, Colo.

You should not attempt any treatment of your sows, because of not having a knowledge of the proper medicines and dosages. There are some common troubles with livestock that a ranchman should know how to handle and need not call the veterinarian for, but in this case I would advise getting a veterinarian. The class of medicines used is named aphrodisiac, and should be administered only by a veterinary. Since the sows have been on green feed all summer I know of no change of feed which will be effective. If they had been on dry feed during the summer it is quite likely that a change to green feed of some kind might have the desired results.—G. E. Morton.

Mites and Lice

A few weeks ago I wrote you and your answer was so convincing I am writing you again. My hens quit laying in early June. They run in the grain fields, wheat and rye, and are fed oats morning and evening—small feeds, possibly, but all we can just now. We are not able to find any lice or mites on them, but it surely must be something on that order, we think. Their combs are shrunken terribly and poor color. We have had no sick chickens since midwinter. We had a few weak in the legs, but thot it was the damp floor then. Some of their feathers have all the web off with just the stiff quill full length left. We have used Lee's Lice Killer on perches and premises, and Buhach powder. If that does no good, what would? I do not know how to dip them, but think it could be done. I have the blue ointment which I have used on the young chix successfully, but these forty old ones would have to be handled at night, and they are flighty, making it tedious. I have lost no young chix to speak of, just one dies out of 56. The old ones are Minorcas. Is Kreso as good as Lee's Lice Killer?—Mrs. C. R. F., Elko, Nev.

If your hens are not afflicted with body lice, dipping is entirely unnecessary. Even tho you have sprayed the perches and premises as you say, there still may be mites hidden in the cracks and crevices that are doing the damage to your fowls, for at this season especially they should be laying almost as good as they did two months earlier. I should be tempted to look first of all for the little blood-sucking mites which hide during the day time about the roosts and in the cracks of the walls. Knock apart the perches and look closely in the concealed places. If you find no mites, I am at a loss to account for the trouble, as free range and clean, roomy quarters should provide all the feed and comfort your fowls should require. Could we visit the place, it might be possible to determine the trouble, but there are so many things which have to do with the condition of the fowls, that it is impossible from even the clear description you give of the conditions, to tell what the trouble is. The fact that you have lost no young stock is encouraging and might prove that mites do not exist if these young fowls roost with the older ones in the hen house. You should be very cautious in using blue ointment salve on baby chicks. One woman in Colorado this year lost one hundred and twenty-five baby chicks, some several weeks old, by using blue ointment salve. It is very dangerous, and for the lice which infest the young fowls, lard or vaseline is fully as good.

The total pack of canned corn this year is expected to reach 11,000,000 cases, the largest since 1912.

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The Maple Grove Grange drill team has returned from the National Grange meeting at St. Louis with new laurels. Following is an account of the fourth degree work put on by this team and of the patriotic drill, as taken from the Ohio Grange Monthly:

"Friday was taken up entirely with degree work. In the morning the first degree was exemplified by Hopewell degree team of Illinois in a faultless manner. The sensation of the day was the conferring of the fourth degree by the Maple Grove Grange team of Jefferson county, Colorado. The work was preceded by a military drill which for perfection surpassed anything ever seen in the National Grange. The team appeared in complete military effect uniforms, which added greatly to the impressiveness of the work. This team exemplified the spirit of the west, as forty loyal patrons came almost one thousand miles and their car fare alone amounted to over $800. Most of this expense was borne by the team itself."

Drill Team Entertained

Following is a portion of an article written by a Grange member appearing in the Arvada Sun regarding the victorious trip of the Maple Grove drill team to the National Grange meeting at St. Louis in November:

On Friday morning we drilled at the Liederkranz Club house, which is situated away out from the heart of the city. It is owned by the leading citizens of St. Louis and is the finest club house of the city. Needless to say, we brought the honors back to Colorado, altho our competitors drilled very good and put on the degree work in good style.

On Saturday the Turkey Hill Grangers, of Belleville, Ill., entertained us in a royal manner. We took the trolley across the toll bridge and were met at Belleville by the Grangers. They took us to the aviation camp, which is located about 15 or 20 miles from the city of Belleville. We drilled out on the field for the soldiers' inspection. We met several Colorado boys who are now aviators and are ready to leave for France at most any time. There are, I believe, about 69 machines now flying, but they expect to have 100 before long. Returning from the camp we drove thru the farming district. The farms are situated upon rolling hills. It seemed strange to us to see large farms all under cultivation, with a coal mine in one corner. Most of the farms have a nine-foot vein of coal. After returning, dinner was served at the Belleville House. After dinner we drilled at the public square. The sun shone all day for the first time during our trip, therefore we became rather warm, so led by prominent Grangers, citizens of Belleville, and Captain Swayze we raided an ice cream parlor. This being the end of a perfect day, we started to St. Louis in automobiles, passing over the great Free bridge across the Mississippi.

State Grange to Meet

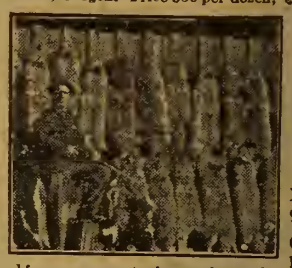
Preparations are being made for a big session of the Colorado State Grange, which is scheduled for January 15th to 18th, inclusive. The program has been prepared and will be published in full in the next issue of Western Farm Life. Matters of vital interest to the farmers of the state will come up for discussion and action. The competitive drill which is always one of the big features of the session, will take place the evening of the 15th and the banquet on the night of the 17th.

Kit Carson County Fair

Grange day at the Kit Carson county fair will be long remembered by the farmers of that county, because of the fine exhibits shown. One of the best boosters for Grange day at the fair was L. F. Brammeier, master of Golden Rule Grange No. 281, also deputy master of the State Grange. Thru the efforts of Mr. Brammeier the six subordinate granges of the county had separate booths for their exhibits, each decorated with the grange banner. It is hoped that even greater efforts will be made by the subordinate granges of Kit Carson county at the next fair, and that all granges in the state will take more interest in their county fairs in future. Members of subordinate granges, wake up and show what your farms will produce at your county fairs next fall.

Darden Pomona held at Maple Grove hall December 1st, found many Grangers out for an interesting day's program. The principal speakers at the open session in the afternoon were Dr. V. T. Cooke, the dry farming expert formerly of Brazil, and Floyd Tripp, the new county agriculturist for Jefferson county. Both talks were of a practical nature and greatly appreciated. In the evening Dr. Charles L. Mead, pastor of Trinity Methodist church, who is known as one of the most brilliant pulpit orators in the west, delivered a rousing patriotic address.

RESULTS of Using our Sure Death Capsules by U. S. Forest Ranger, Charles F. Grooms Ukiah, Oregon. Price 35c per dozen; $2.25 per hundred, express prepaid on 4 dozen or more.



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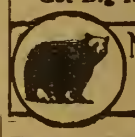

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Farmers' and Stockmen's Exchange

FARMS AND RANCHES

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

SOUTHERN CALIFORNIA RANCH FOR SALE. Write for particulars. Box 145, Victorville, Calif.

WANTED—TO HEAR FROM OWNER OF GOOD farm for sale. Send description and cash price. Co-operative Sales Agency, Minneapolis, Minn.

160 ACRES, 3 MILES OF DEMING, N. M., FOR sale cheap. Write for particulars. Richard Bodyfield, Deming, N. M.

WANTED—TO HEAR FROM OWNER OF GOOD ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minn.

FOR SALE—640 ACRES OF THE BEST IMproved dry land in Douglas Co., cheap, with or without stock and implements. G. Gerber, 417 18th St., Denver, Colo.

SHEEP RANCH SECTION. GOOD SOIL AND location, buildings fair, enclosed with woven wire. $15 per acre. W. E. Brown, Beaverton, Mich. R. 2.

I HAVE SOME CASH BUYERS FOR SALABLE farms. Will deal with owners only. Give full description, location and cash price. James P. White, New Franklin, Mo.

FOR SALE, TRADE, LEASE, PARTNERSHIP. 240-acre embryo stock and alfalfa ranch, Cedaredge, Colo. Running water all year. One forty $8 per acre. Easy terms. Caldwell, 1321 E 9th, Pueblo, Colo.

IRRIGATED FARM FOR SALE—225 ACRES, five miles from Denver Stockyards, one mile from railroad station. First-class water right; excellent improvements; liberal terms. J. D. Hitch, 525 Cooper bldg., Denver.

DO YOU DESIRE A HOME? OR DO YOU WANT to sell or trade the one you already have? We are in a position to assist you either way. We will find you a customer who will buy your real estate, or we can find you a home for cash or easy payments anywhere you choose. Let us hear from you at once. Perry & Son, Weldona, Colo.

LIVE STOCK

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

CATTLE

NONE BUT THE RICH CAN AFFORD TO raise scrubs. Head your herd with a bull from Buffalo Grass, Shorthorn herd. Have sold bulls 40 years and no kick. Samuel Ball, Star Rt., Wray, Colo.

HOGS

FOR SALE—O. I. C. BOAR PIGS, REGISTERED. H. M. Ball, Pierce, Colo.

BIG TYPE POLAND CHINA SOWS, REGISTERED, bred or open. W. J. Peterson, Seibert, Colo.

REGISTERED, BIG TYPE DUROC JERSEY hogs for sale. Edgemoor Farm, Littleton, Colo. Caldwell Martin, Owner.

POULTRY

Advertisements under this head will be inserted at 5c a word, four or more insertions 4c a word each insertion. No display type or illustrations admitted.

QUALITY DARK CORNISH, THE IDEAL FARM fowl. W. W. Officer, Fowler, Colo.

FOR SALE—THOROBRED BOURBON RED turkeys. Mrs. W. B. Keefer, Torrington, Wyo.

FOR SALE—THOROBRED LIGHT BRAHMA cockerels. E. Grosser, 2240 Perry, Denver.

QUALITY DARK CORNISH—A FEW CHOICE cockerels from prize winners at $3 and $5 each. R. H. Jandebeur, Alma, Neb.

A FINE LOT OF VIGOROUS, EGG-BRED S. C. W. Leghorn cockerels for sale. They will improve your flock. Rowley Egg Farms Co., Palisade, Colo.

WHITE WYANDOTTES, CHOICE COCKERELS for sale. Mrs. Geo. Wheeler, Route A, Otis, Colo.

HALL'S S. C. REDS WIN AGAIN AT WYOMING State Fair. Some fine birds for sale at low prices. Liston L. Hall, Gering, Neb.

BARRED PLYMOUTH ROCKS; A NICE LOT of Cockerels, mostly of the light or pullet bred line, and a few hens and pullets, Bradley and Latham strain, none better. Chester Blunt, Greeley, Colo. R. 1.

BREEDING STOCK—WE CAN SUPPLY ALL leading varieties of Cockerels, also one or two-year old turkey gobblers and hen turkeys. Write for prices and particulars. Columbia Hatchery, P. O. Box 1102, Denver, Colo.

HELP WANTED

WANTED IMMEDIATELY: MEN-WOMEN, 18 OR over. U. S. Government positions. Hundreds clerical positions obtainable. $90 month. Quick increase. Easy work. Write immediately for list positions. Franklin Institute, Dept. K 177, Rochester, N. Y.

SALESMEN WANTED—OWING TO CONDItions brot about by the war we have a few well worked territories open and will be pleased to hear from interested persons. Applicant must be exempt from draft. McConnon & Company, Dept. R, Winona, Minn.

WANTED—RENTER FOR 320-ACRE FARM; 120 A. cleared; farm equipment complete, including tractor; 12 miles west of Lyford, Tex.; must be good livestock man, experienced in dry farming methods and irrigation. Write James Ross, 4618 Dover St., Chicago, Ill.

MISCELLANEOUS

RAW FURS WANTED—DON'T SHIP YOUR wool, poultry, hides, or furs of any kind until you get our price list. Perry Brothers, Weldona, Colo.

FOR SALE—LITTLE BULL TRACTOR, $275. Twelve 100-lb. shotes; weanling colts; White Plymouth Rock cockerels. Lone Tree Ranch, Carr, Colo.

NUTS—CHOICE HICKORY NUTS 12 CENTS. Walnuts 6 cents. Orders above 30 lbs. prepaid. Can you beat it for a Christmas present? Don't pay 25 to 40 cents for nuts. Rock Bottom Nut Co., Emporia, Kans.

KODAKS

KODAKS, CAMERAS, PHOTO SUPPLIES—Fords, the best kodak store, 1029 16th St., opp. old P. O., Denver, Colo., for Eastman Kodaks, all makes cameras, films, photo supplies; develop any size roll films, 10c; print pictures, 3c each and up; mail orders solicited; kodak and camera catalog mailed free upon request. Mention this paper.

PET STOCK

BLUE MERLE AND ENGLISH SHEPHERD pups. Herman Brueschoff, Norwood, Minn.

NURSERY STOCK

BUY TREES FOR YOUR ORCHARD OR GROVE and have two and three years to pay at the same time. All stock that fails to grow replaced free. Address Weldon Valley Adv. Co., Weldona, Colo.

LUMBER

LUMBER—POSTS. WRITE US ABOUT PRICES delivered your station. Send list for estimate. Pay after unloading. Kirk Company, Box 1138-S, Tacoma, Wash.

TANNING

LET US TAN YOUR HIDE—COW, HORSE OR calf skins for coat or robe. Catalog on request. The Crosby-Frisian Fur Co., Rochester, N. Y.

BEE SUPPLIES AND HONEY

BEE SUPPLIES OF BEST QUALITY. SEND for 68-page illustrated catalog. We also sell Comb and Extracted Honey. The Colorado Honey Producers' Association, Denver.

Alberta's Agricultural Schools

The province of Alberta is essentially agricultural, and its government early decided that one of its most important duties was to give the boys and girls who were going to spend their lives on farms at least as good a chance to learn the business of farming as they had to study other vocations.

There are no examinations for entrance to these schools, and no tuition fees. The only expense that the students have is the cost of their board. The schools are established on demonstration farms, each of 320 acres. Each has a school house, a live stock pavilion with an agronomy laboratory above it, and a blacksmith shop with a carpenter shop above it. Each farm has a model set of buildings, consisting of a dairy barn, a horse barn, a barn for young cattle, and other outbuildings such as any good farmer probably would build for himself. The school operates its farm on a commercial basis and specializes in the kind of farming that is suited to the part of the province in which it is situated.

The instruction in the schools is of the most practical character. The object is simply to teach the boys and girls of Alberta how to be successful farmers. A small part of the farm is used for experimental plots, but those are only for the purpose of trying out certain kinds of grains and grasses. In the larger field the instructors demonstrate to the boys and girls what can be done under actual farming conditions. In the blacksmith and the carpenter shop the boys learn to make repairs and to erect small buildings, such as they may need on their farms. * * *

In these Alberta schools the girls are not neglected. They receive instruction in household science, sewing, dairying, poultry raising, gardening and kindred subjects. The instructors try to give added interest to every household duty that a girl has to perform on the farm. * * *

English, mathematics, and a few kindred subjects are also taught in these schools, and a good library of books and agricultural papers is provided for the use of the students.

The average age of the boys at the schools is about 19 years; they have reached the time of life when they have chosen their occupation, and they come to the schools for the serious purpose of so informing themselves that they will become more efficient in their work on the land. Ninety per cent of the students come from within a radius of 50 miles

Every boy or girl who leaves one of the Alberta agricultural schools realizes the opportunities that the farm offers for making not only a comfortable but an attractive home, where a man and a woman, with a reasonable amount of labor and a good deal less worry than the average city dweller has, can assure themselves security and independence in their declining years.

In 1915 Alberta established a faculty of agriculture in its provincial university. There boys who wish to obtain a degree in agriculture can receive a highly scientific training, but no boy is admitted to the agricultural department of the university unless he is a graduate of one of the schools; he must have the practical training first. The course in the schools consists of two terms of five months each; that of the university is three terms. About 10 per cent of the pupils take the university course; the other 90 per cent go back to their farms.—By Duncan Marshall, Minister of Agriculture for Alberta, in The Youth's Companion.

IF YOU COULD SEE

Our yearling to three-year-old stallions running in the same lot, feeding together, out in the open with not even a shed to run under, and our mares and colts running in the pastures, and see that we are growing this kind of stock under the same conditions that you are growing your colts at home, you would then appreciate the advantage of Western acclimated horses as against buying stallions or mares direct from the East.

NO DOUBT YOU HAVE SEEN THIS DISADVANTAGE IN YOUR OWN COMMUNITY BEFORE NOW.

HORSES ACCLIMATED TO YOUR OWN CLIMATE CANNOT BE COMPARED WITH EASTERN HORSES.

BUY AT HOME, SAVE MONEY AND THE WORRY OF POSSIBLE LOSS OR DISSATISFACTION.

THIRTY HEAD COMING TWO AND THREE YEARS OLD TO SELECT FROM (DIAMONDS IN THE ROUGH).

We will be glad to answer your letters.

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Breeders

Percheron and Belgian Horses and Holstein Cattle

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THE HEREFORD CORPORATION OF WYOMING

Ranch Six Miles From Cheyenne, Wyoming

Registered Herefords Exclusively Anxiety Bred

We have on hand two carloads of coming 2-year-old bulls in fine condition for service. Write us for prices and detailed information.

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RAYMOND S. HUSTED, Manager

WM. J. ROSSMAN, Ranch Superintendent JAMES C. ADAMS, Salesman

Hereford and Guernsey Heifers

We are offering for sale three good yearling Hereford heifers, in order to reduce our herd. Two of these are by Heirs Anxiety. The dam one of these heifers was sired by The Heir, and the dam of the third is by Heir Apparent. Will be sold cheap if taken soon.

Two young Guernsey cows also for quick sale. Both sired by Imp. Polonious, a prize winner at the National Western Stock Show.

This is a good chance to get pure-bred breeding stock at low cost.

Also some Poland China and Duroc Jersey boars of July farrowing. Spring boars all sold.

Animal Husbandry Department

COLORADO AGRICULTURAL COLLEGE

FORT COLLINS, COLO.

HIGH CLASS JERSEYS AND DUROCS

Majesty Oxford Combination, half brother to the grand champion at Columbus, at head of herd.

Have a yearling son of the great Count Majesty, out of a Register of Merit cow, at right price. Only three of Count's sons left.

Have one March boar, sired by a son of Grand Model, and out of a daughter of Model Critic, a big, long stretchy fellow, at $65, worth a hundred. Will spare one open gilt.

A. M. McCLENAHAN

Greeley, Colorado

BARGAINS Percherons, Belgians, Shire, Suffolk, Clyde, Hackney, Great Coach Stallions, $450 and up. Good Jacks. One, two and three years' time given purchasers.

R. I. LITTLE

Good Block Des Moines, Iowa

JACK MEN, LISTEN

I have the largest 6-year-old jack west of the Missouri River for sale. Other bargains in Mammoth jacks and jennets.

Inspection Invited Satisfaction Guaranteed

W. H. WHEELER, Garden City, Kan.

Shorthorn and Polled Durham Cattle

Valentine's Last, X12816; 452005 at head of beef herd. Claywood White, 427850 at head of milk type.

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Everything Registered

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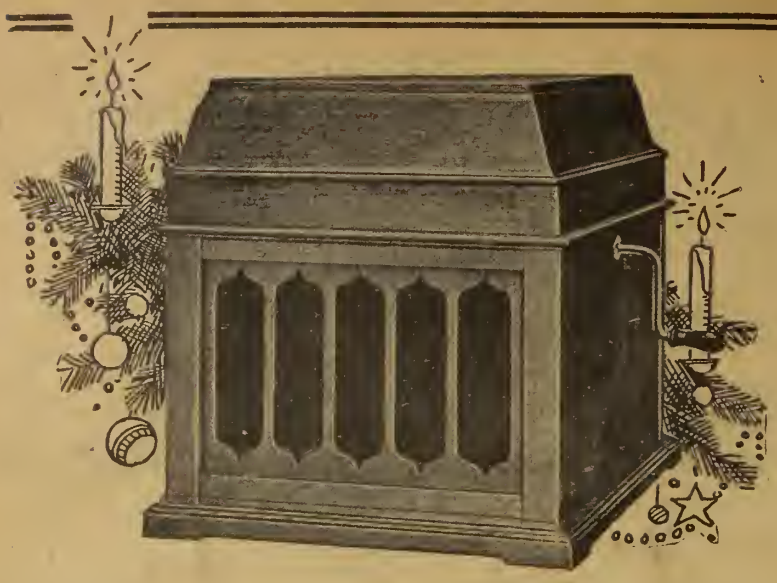
C. F. BURKE, Rocky Ford, Colo.



What kind of music will there be in *your* home this Christmas?

CHRISTMAS AND MUSIC are inseparable. You cannot think of Christmas without thinking of music—all kinds of good music. What kind of music will there be in *your* home this Christmas? What instrument and what voices will entertain you?

Have you ever stopped to realize that all voices, and all musical instruments, excepting one, have their limitations? As wonderful as a piano is, it can give you only piano music; as beautiful as an organ is, it can give you only organ music; as marvelous as the human voice is, it can only sing. It is the same with the violin, the cornet, the accordion or any other instrument which you might have in your home or might consider purchasing. These are excellent in their way, but we are sure you will agree that none of them is completely satisfying.

It is different with the New Edison Diamond Amberola. It has no musical limitations, for it is all voices and all instruments in one and it brings into the home all kinds and classes of music, from the greatest of operatic numbers sung by the most famous of singers to the simplest of popular and comic songs sung by the cleverest performers in their line; from the performances of great military bands and symphony orchestras to the snappy music of the ever popular banjo.

The New Edison Diamond Amberola is not an instrument that you must forbid the children touching for fear of putting something out of order. Even a very young child can readily learn to operate this marvelous instrument, for it is simplicity in itself and is not readily put out of order, and the Blue Amberol records are almost unbreakable and unwearable. With the Amberola you do not even have to bother to change needles. There are no needles to change. Instead of needles Mr. Edison uses a GENUINE DIAMOND, ground and polished to fit perfectly in the grooves of the record, and so perfectly round and smooth that it has no effect on the record. As you know, a diamond never wears out. To operate the Edison Amberola all that is necessary is to put on a record and lower the reproducer so as to bring the diamond stylus (reproducer point) into contact with the record. Besides keeping the Amberola wound up and oiled, there is nothing else to do.

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It is Mr. Edison's wish that you hear his Diamond Amberola in your home. In order that Mr. Edison's wish should be fulfilled, we will place a New Edison Diamond Amberola and a choice selection of Blue Amberol records in your home for three days. Play them to your heart's content, invite your friends in to enjoy the music with you. At the end of three days tell us that you want to buy the instrument and records for cash, that you want to buy them on terms, or that you do not care to purchase at that time and request us to call for the Amberola and the records. We leave it entirely to you whether you keep the instrument and records or whether you send them back. Whatever your decision, we shall consider the matter at an end. You will be under no obligation whatever. We will be the ones to feel obligated to you for permitting us to place the instrument and records on trial in your home. Thousands of families throughout America are enjoying these free trials because of Mr. Edison's desire that no one should miss hearing his marvelous invention. Why not you? You are just as much entitled to the opportunity as anyone else, and there is no reason why you should not take advantage of it. When requesting your free trial, please use the coupon at the bottom of this page.

Send for the Beautiful Amberola Booklet. It is FREE

The Music You Get When You Own an EDISON AMBEROLA

Music was never more welcome in the American home than it is today. Home has never meant more to Americans than it does today. With some of our boys at the front and many preparing to go, the tenderest and deepest emotions surge through our souls. It is then that nothing is more appropriate than good music as the companion of our leisure hours. Whatever your tastes, whatever your mood, there are many selections in the Blue Amberol Record Catalog to suit—beautiful old hymns that seem to just lift you out of your immediate surroundings to a higher plane where the spirit is free and unfettered by the irksomeness of the daily routine—thrilling band records that just make you feel like getting up and marching around the room—noble patriotic numbers that would stir the heart of a traitor—tender old and new songs and ballads that go straight to your heart—majestic grand opera that appeals to the deepest of human emotions—lively dance pieces, ragtime and funny records—entertainment of all kinds for young and old.

So that you may have an idea of the many wonderful selections to be found in the Blue Amberol Record Catalog, we have picked a few here and there and they're printed below. Look them over. You are sure to find many of your favorites.

FOR CHRISTMAS

Angels from the Realms of Glory
Bells of Christmas
Birthday of a King
Hail! Hail! Day of Days
Hark! Hark! My Soul
It Came Upon the Midnight Clear
Joy to the World
Night Before Christmas
Old Jim's Christmas Hymn
O Little Town of Bethlehem
Once in Royal David's City
Ring Out the Bells for Christmas
Ring Out, Wild Bells
Santa Claus
Silent Night
Star of Bethlehem
Sweet Christmas Bells
When Christmas Bells are Ringing

SACRED

Ave Maria
Beautiful Isle of Somewhere
Crucifix
God is Love, His Mercy Brightens
My Ain Countrie
Rock of Ages
Face to Face

QUARTETS

The Bridge
Come Where My Love Lies Dreaming
Darling Nellie Gray
Maple Leaf Forever
Massa's in de Cold, Cold Ground
Laughing Song
The Rosary
We're Tenting To-night
Way Back Home

HAWAIIAN

Aloha Oe (Farewell to Thee)
Kamehameha March
Medley of Hawaiian Airs
Moani Ke Ala
Waialae (Waltz Song)
Koleo
Pulupe

BANDS

At the Mill March
Battle of the Marne—Descriptive
Benediction of the Poignards—Huguenots
Glowworm
Humpty Dumpty Rag
In the Clock Store—Descriptive Fantasia
Jolly Coppersmith—with Anvil, Singing and Whistling
My Old Kentucky Home Fantasia
United States Passing in Review

INSTRUMENTAL SOLOS

I Hope I Don't Intrude, Bells
King of Air March, Xylophone
Kiss Waltz, Saxophone
Lullaby—Jocelyn, Cornet
Medley of Southern Airs, Banjo
Old Black Joe, Piano
Peg o' My Heart, Violin

DANCE

Carnival One-Step
Destiny Waltz
Good-Night Waltz
Money Musk Medley Virginia Reel
Oh, You Silv'ry Bells Medley Two-Step
Old Comrades March
Stop! Look! Listen! Fox Trot
Ticking Love Taps Fox Trot
Leg of Mutton One Step

GRAND OPERA

Elisir d'Amore—Una furtiva lagrima
Faust—Air des Bijoux
Pagliacci—Prologue
Rigoletto—Caro nome
Trio from Faust
Bridal Chorus from Lohengrin
Mignon—Ah! Non credevi tu

VOCAL DUETS

All Aboard for Blanket Bay
As We Parted at the Gate
Auf Wiedersehen—The Blue Paradise
Barcarolle (Oh, Lovely Night)—Tales of Hoffman
Every Little Movement—Madame Sherry
For You
Good-Bye, Good Luck, God Bless You
Land of Golden Dreams
I Was Never Nearer Heaven in My Life

DENVER DRY GOODS CO., DENVER, COLO.

If you live in Idaho or Utah write Proudfit Sporting Goods Co., Ogden, Utah

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McKannon Piano Co., 1620 California St.
Mapel Piano Co., 1522 California St.
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EATON—T. M. Simpson
FORT COLLINS—Auld & Miller
FORT MORGAN—Fort Morgan Drug Co.
FRASER—Harrison Drug Co.
FREDERICK—Frederick Pharmacy
GLENWOOD SPRINGS — City Drug Store
GREELEY—Bates Music Co.
GUNNISON—E. M. Collins
HOLLY—A. A. Morich
HOLYOKE—Standard Drug Co.
IDAHO SPRINGS—C. Marchington
KERSEY—C. A. Taylor
LAMAR—W. A. Zimmer Drug Co.
LEADVILLE—George Nicolai
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MONTROSE—Gould & Reynolds
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Pueblo Phono. Co.
PAONIA—Otto Bross
RIDGEWAY—S. S. Boucher
ROCKY FORD—C. O. Clark Mus. Co.
C. W. Taylor
SAGUACHE—J. W. Beery
SALIDA—W. C. Alexander
D. J. Kramer
STEAMBOAT SPRINGS—Chamberlain Gray Drug Co.
STERLING—C. R. Bauman
STRATTON—Thomas Drug Co.
TELLURIDE—H. C. Baish Drug & Jewelry Co.
TRINIDAD—Trinidad Furn. Co.
VICTOR—H. H. Rosser.
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WESTCLIFFE—Schultz Merc. Co.
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YUMA—H. W. Jackson

KANSAS

GOODLAND—C. E. Garrett
SYRACUSE—Blanchat & Co.
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NEBRASKA

ALLIANCE—George D. Darling
BAYARD—Ericson Drug Co.
BENKELMAN—Swanville Music Co.
BRIDGEPORT—Bridgeport Phar.
CULBERTSON—M. O. Reynolds
HEMINGFORD—H. R. Olds Drug Co.
RAIN—C. O. Laird
SCOTTSBLUFF—McCreary Bros.
SIDNEY—R. E. L. Jackson
W. LeRoy Larson

NEW MEXICO

ALBUQUERQUE—Rosenwald Bros.
Weiller & Benjamin
AZTEC—E. C. Waring
CLAYTON—E. P. Kilburn
EAST LAS VEGAS—Rosenthal Furn. Co.
EATON—W. E. Nutting
SANTA FE—C. L. Grant
Weitmer & Burrows Drug Co.

WYOMING

ALVA—B. P. Colvin
BASIN—Montgomery & Hartigan
BUFFALO—T. J. Gatchell
CASPER—Chamberlin Furniture & U. Co.
CHEYENNE—Wyoming Book Store
CODY—Post Office Store
DOUGLAS—H. R. Daniels
GILLETTE—Church Jewelry Co
KAYCEE—Kaycee Drug Co.
LANDER—Lander Drug Co.
LARAMIE—W. H. Holliday Co.
LUSK—J. H. Slater
MEDICINE BOW—W. F. Shields
NEW CASTLE—J. W. Sprecher Pharmacy
RAWLINS—O. H. Peterson
SHERIDAN—Sheridan Music Co.
SHOSHONI—A. O. Heyer
THERMOPOLIS—Martin's Phar.
TORRINGTON—Kellam & Kellam
WHEATLAND—F. G. Huffman
WORLAND—Worland Drug Co.

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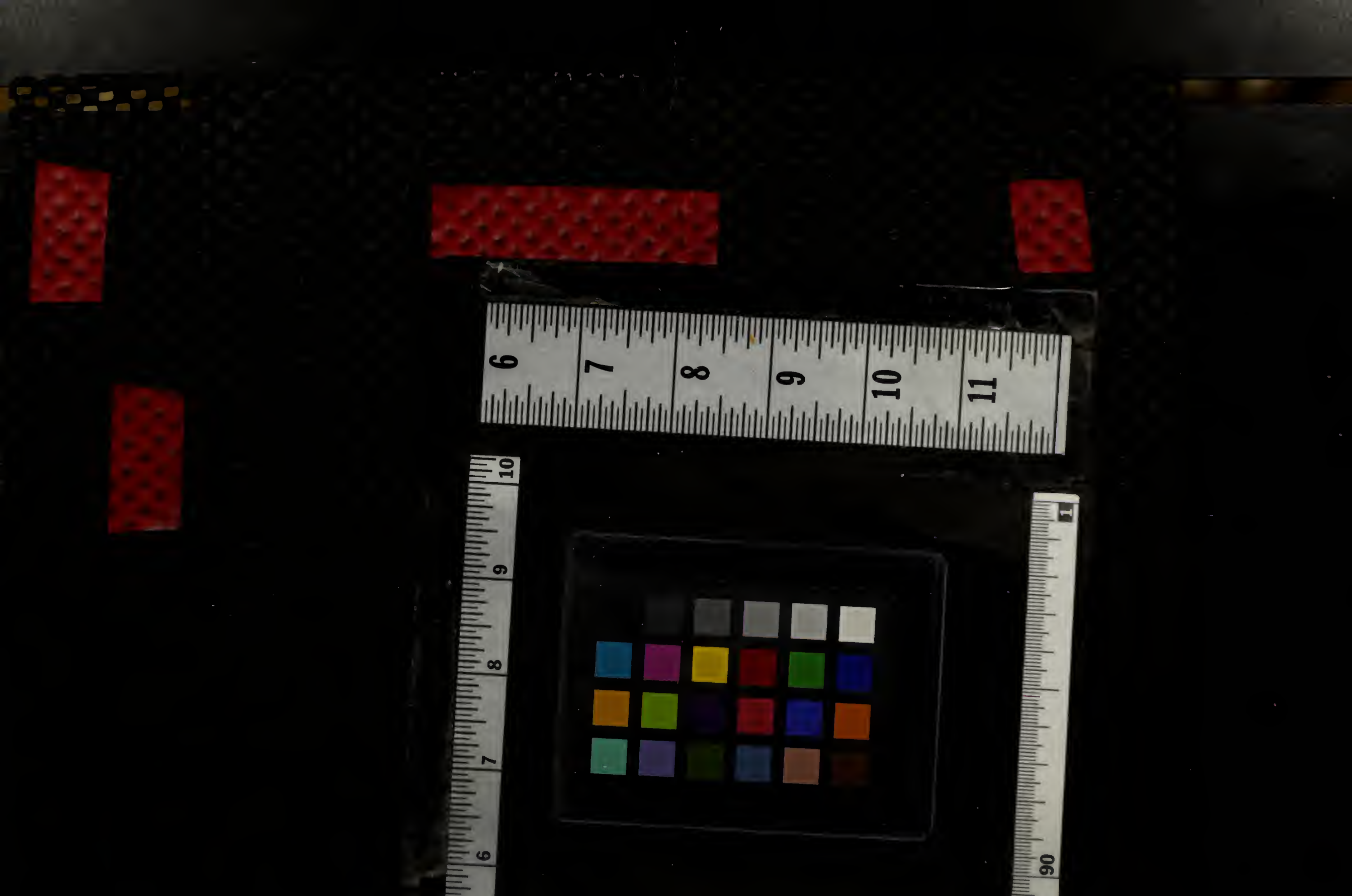

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